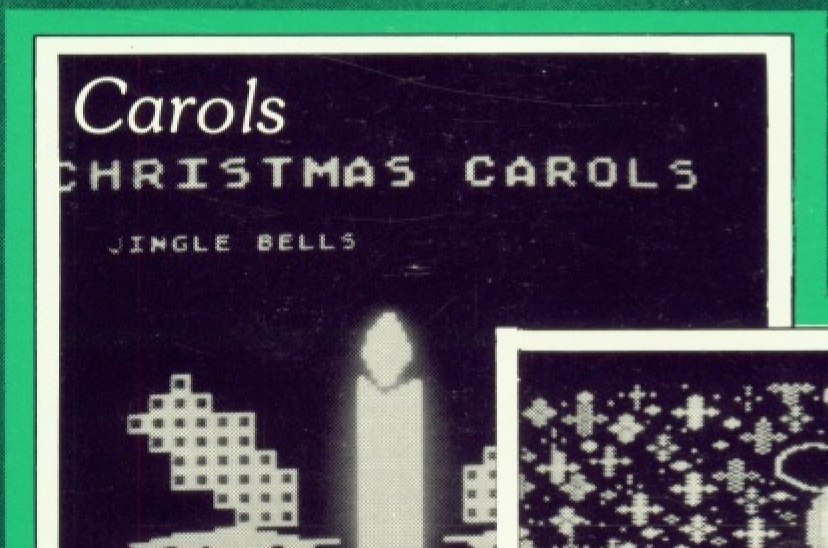
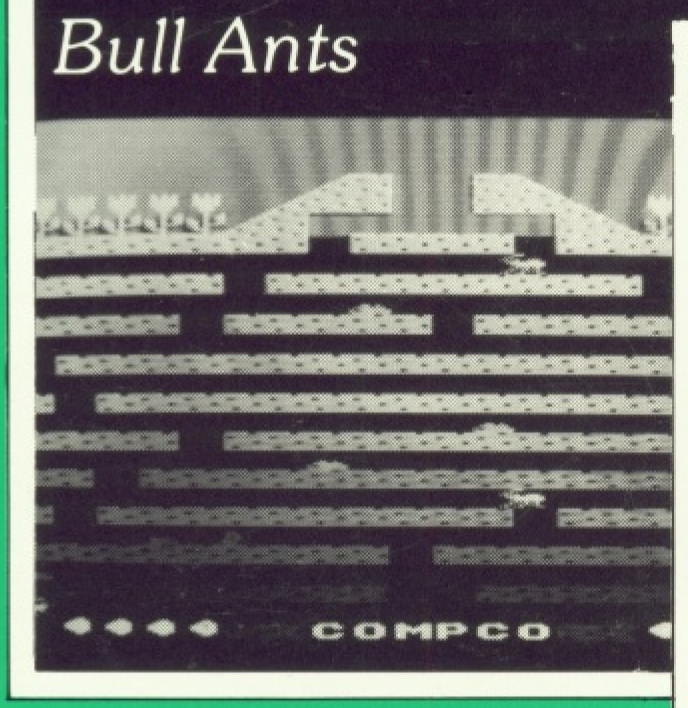
THE MAGAZINE For ATARI™ Computers

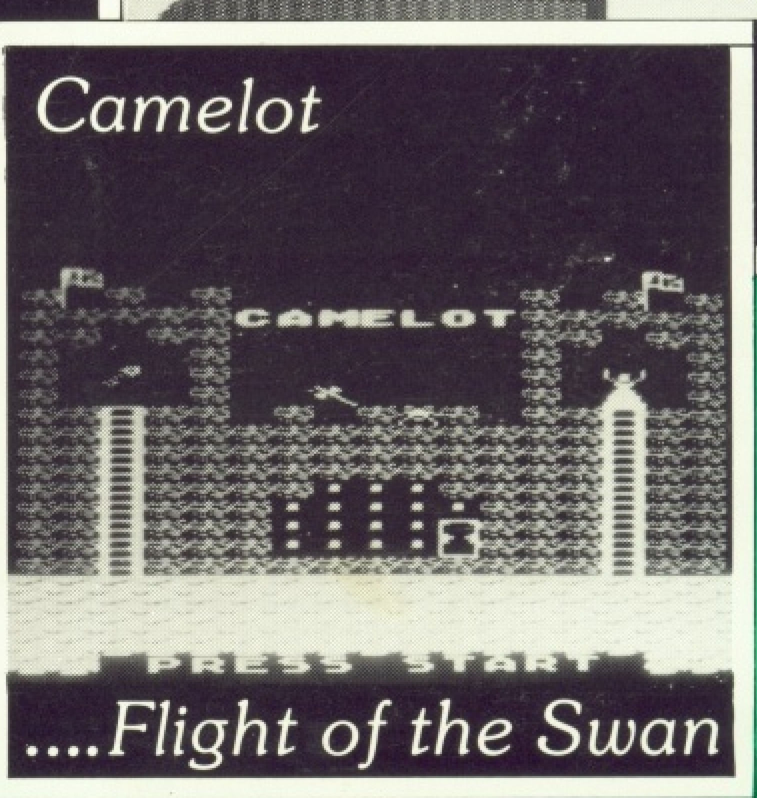
PAGE 6

ISSUE 13
90p

INSIDE







ATARI in 1985 - see page 8

ATARI® USERS MAGAZINE........AN ATARI® USERS MAGAZINE........AN ATARI® USERS
......GAMES........ ATARI™........NEWS........ ATARI™........ PROGRAMS........ATARI®........ REVIEWS......

Llamasoft

ORIGINAL SOFTWARE DESIGN

49 MOUNT PLEASANT, TADLEY, HANTS. RG26 6BN.

SEND S.A.E. FOR (FREE NEWS LETTER) "THE NATURE OF THE BEAST".

TRAXX



VIC 20 LLA 12003 £5.00

HELL GATE

VIC 20 LLA 12007 £6.00
CBM 64 LLA 21008 £5.00

METAGALACTIC LLAMAS BATTLE






VIC 20 LLA 11006 £5.50
CBM 64 LLA 21010 £5.50

ABDUCTOR





VIC 20 LLA 11001 £5.00

MATRIX



VIC 20 LLA 12005 £5.00
CBM 64 LLA 21006 £6.00

LASERZONE





VIC 20 LLA 12004 £5.00
CBM 64 LLA 21004 £6.00

GRIDRUNNER



VIC 20 LLA 11002 £5.00
CBM 64 LLA 21003 £5.00
ATARI LLA 41001 £5.00

SHEEP IN SPACE



CBM 64 LLA 21009 £7.50

HOVER BOVVER

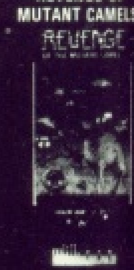
CBM 64 LLA 21005 £7.50

ATTACK OF THE MUTANT CAMELS



CBM 64 LLA 21001 £6.00
ATARI LLA 41003 £7.50

REVENGE OF MUTANT CAMELS



CBM 64 LLA 21007 £7.50



WOOLWORTH. W H SMITH



John Menzies



DEALERS may order direct from CBS Telesales 01-960 2155 quoting account number, LLA code number and quantities. Goods delivered within 48 hours.

PAGE 6

Editor & Publisher
Les Ellingham

Printed by
Stafford Reprographics Ltd.

Typesetting
Budget Typesetting Ltd.
from copy set on an Atari 800 and transmitted by modem.

Editorial & Advertising
0785 41153

Correspondence
PAGE 6 Magazine
P.O.Box 54
Stafford
ST16 1DR

PAGE 6 is published bi-monthly

Page 6 is a users magazine and relies entirely on readers' support in submitting articles and programs. The aim is to explore Atari computing through the exchange of information and knowledge and whilst we cannot, unfortunately, pay for articles published, we hope that you will gain satisfaction from seeing your work published and in turn we hope that you will learn from articles submitted by other readers.

ISSUE 13 **January/February 1985**

Subscription rates - annual (6 issues)

U.K.	£ 7.00	Outside Europe - Surface	£10.50
Europe	£10.50	Outside Europe - Airmail	£16.00

Single copies and back issues at one-sixth of above rates.

Please make cheques payable to PAGE 6.

Please mention PAGE 6 when replying to advertisers.

From the Editor

Welcome to another issue of PAGE 6 which hopefully will reach you before Christmas. As usual this issue has a slant towards games to keep you merry and occupied around Christmas and the New Year. Music is also associated with Christmas and you will find a music theme in this issue with comments on Pokey Player and Advanced Music System II as well as Carols for you to type in. If you prefer to make your own music then Music Maker will let you use your keyboard as a piano or organ.

Unfortunately those of you with only 16k memory will not be able to play Flight of the Swan, our other competition winner or Camelot but I have included other listings which will run in 16k. Although it is easy for me to say, as I don't have to pay for it(!), I would strongly recommend anyone with 16k to upgrade their machine to 48k for it really does open up a whole new world. Quite apart from the many more commercial programs that will become available to you, programs from PAGE 6 such as RESCUE MISSION and CAMELOT, which cost you nothing, will make it well worth while. Whilst it is possible to write good programs in 16k, many of the programs which have been submitted to us do require at least 32k as the programmers have used so many of the facilities of the Atari that something would have to be sacrificed to fit into 16k. If you did not get an upgrade for Christmas try and persuade someone to buy you one, or save up yourself. You won't regret it.

At last things seem to have started moving from Atari and you should be well aware of Atari advertising by the time you read this. We all wish Atari every success over Christmas and for 1985 and, if the optimism of the people at Atari is anything to go by, Atari will be back at the top quite soon.

Finally, as we reach the end of another year, I would like to thank everyone who has sent in programs, articles or bits and pieces for publication. Every contribution, whether published or not, is much appreciated. We are still a small circulation magazine and rely entirely on your enthusiasm and love of your Atari in providing other owners with a good reason to stick with and enjoy their Atari computers. If you have not been able to make any contribution yourself, you have an opportunity now to show your appreciation of the efforts of others by voting in the annual Readers Poll. Please turn to the centre pages for further information.

May I wish all of you the very best for 1985. Stick with Atari and keep reading PAGE 6!

Les Ellingham

Editor

Listing Conventions

The program listings in PAGE 6 are prepared so that the listings match exactly what you see on a normal 38 column screen. Inverse video and CONTROL characters appear as they do on the screen.

To obtain CTRL characters use the key shown in the following chart.

```
CTRL ,
CTRL A
CTRL B
CTRL C
CTRL D
CTRL E
CTRL F
CTRL G
CTRL H
CTRL I
CTRL J
CTRL K
CTRL L
CTRL M
CTRL N
CTRL O
CTRL P
CTRL Q
CTRL R
CTRL S
CTRL T
CTRL U
CTRL V
CTRL W
CTRL X
CTRL Y
CTRL Z
CTRL .
CTRL ;
SHIFT =

ESC ESC
ESC CTRL -
ESC CTRL =
ESC CTRL +
ESC CTRL *
ESC SHIFT CLEAR
ESC DELETE
ESC TAB
ESC SHIFT DELETE
ESC SHIFT INSERT
ESC CTRL TAB
ESC SHIFT TAB
ESC CTRL 2
ESC CTRL DELETE
ESC CTRL INSERT
```

Make sure that you SAVE a copy of any listing before you attempt to RUN it.

Readers Letters

Dear PAGE 6,

I note with interest your reply to Mr Spencer's request for reviews of copy programs in issue 10. While I understand your position, I feel you should reconsider. While you are undoubtedly correct in assuming that certain individuals will misuse a copy utility, and that some will do so grossly as in the example you quoted, it is also true that there are legitimate and worthwhile uses for such software. By assuming the worst of your subscribers, you tar both the guilty and the innocent with the same brush. In a country where the accused is assumed to be innocent until proven guilty, this seems to me to be rather unfair and not a little insulting.

Having recently up-graded to disk, I find myself with over 30 games, all original and paid for, which are virtually redundant due to excessive loading times and the unreliability of the Atari tape decks. I would dearly like to transfer some or all of these to disk - to have to buy them a second time would really hurt! - and as far as I am aware I would be within my legal rights to do so.

While most software companies refuse to provide back-up copies of their products at a reasonable price, and while floppy disks and tapes continue to be such vulnerable forms of storage, I would suggest that there is a strong case favouring the availability of copy programs to even the average user. I am interested in the Atari version of Visicalc, despite the very high price, but I am reluctant to purchase it with the knowledge that a speck of dust in the wrong place could leave me over £100 out of pocket.

Finally I would like to point out that by reviewing copy utilities you would not be condoning their misuse neither would you be increasing their availability. You would, however, be rendering your subscribers the valuable service of steering them clear of programs which offer bad value for money. I will probably acquire copy programs for the reasons that I have stated, with or without your advice. With your advice I will have more chance to obtain the program that will suit my needs best. I believe that many of your readers will be in the same position and that we could benefit from your advice.

Alan Sharples,
Cumbria

°°A very succinctly put arguement, Alan, whose main points I entirely agree with. I see no problem in a responsible person purchasing a copy utility for the purpose of transferring already purchased cassettes to disk or backing up expensive software in case of damage. If a copying utility existed that did that and nothing more, I would not hesitate to review and recommend it. The problem is of course that copying utilities can't be controlled in that way and the number of purchasers that have NEVER copied something that they don't own is fairly small. The trouble is the temptation of it all. Once somebody has copied something, surely it can't do any harm to make just one more copy?

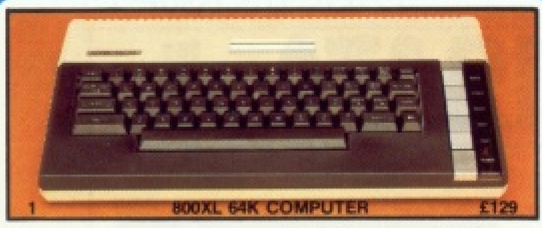
The scale of copying on the Atari in this country is enormous, probably more than on any other computer. There are software libraries where you can hire programs on disk or cassette that are only legally available on ROM. You can hire expensive programs without manuals (in case they get tatty) on brand name disks (in case the original gets damaged). If you know the right people, you can get a copy of any program available for the Atari, including programs not yet officially released. If you like you can have half a dozen on one disk.

By reviewing copy utilities I give publicity to those producing them. Several of these people also produce cartridge back-up utilities. There is no possible justification for backing up a cartridge, you may just as well go out and get an electronics rip-off merchant to back up your computer! The unfortunate fact is that many people producing back-up utilities do so in the full knowledge and expectation that they will be used for pirating software. Why should they care? They are making their money anyway.

So what is the harm of a few copies floating around? Does it really affect you? Yes, it does. Take a walk to your nearest computer dealer and look round for some of the "1000's" of programs available for the Atari. Chances are you won't find any. There are countless retailers who no longer sell imported Atari software simply because it did not sell. It did not sell because too many people found it too easy to get a pirated copy. There are software producers in this country that started off on the Atari and virtually went broke because copies of their games were so easily available. Those who survived switched over to the Commodore and found that they could sell TEN times as much. They are not people making obscene profits, but needing to make some profit just to live. I could go on but the evidence is there, in retail shops around the country and in the magazine advertisements, or rather the lack of them.

There are probably more aware and honest readers amongst the PAGE 6 subscribers than for any other magazine but there are also those who either don't care or who could easily succumb to the temptation given the information. If I review copying utilities, the producers will prosper and some readers at least will be tempted down the pirate path directly as the result of the review. The Atari world is pretty fragile at the moment and I don't want to take the responsibility for inflicting any more wounds. I have seen too much damage done to honest retailers, many of whom were (still are?) dedicated Atari fans.

I fully respect those of you who want copying utilities for entirely proper purposes and mean no offence by the stand that PAGE 6 takes. I don't know the answer, I can only see the problems.



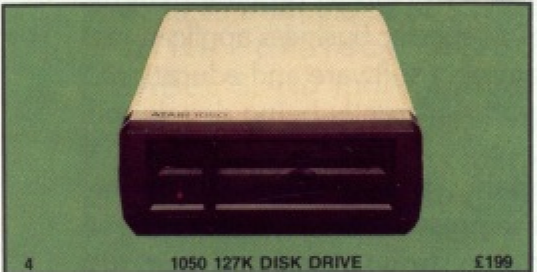
1 800XL 64K COMPUTER £129



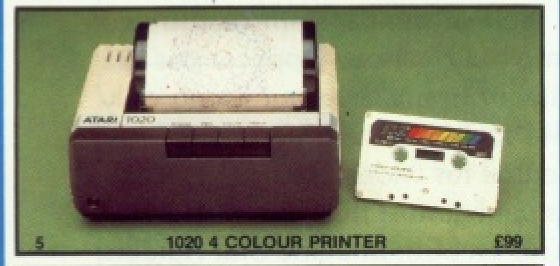
2 400 16K GAMES MACHINE £29



3 1010 PROGRAM RECORDER £34



4 1050 127K DISK DRIVE £199



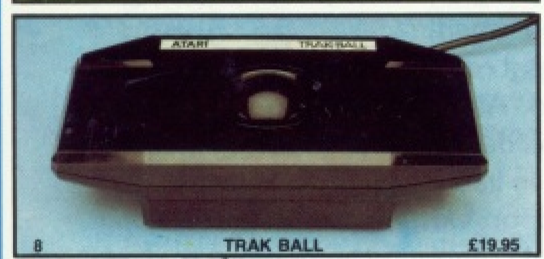
5 1020 4 COLOUR PRINTER £99



6 LETTER QUALITY PRINTER £249



7 TOUCH TABLET PEN+CART £49



8 TRAK BALL £19.95



9 SUPER CONTROLLER £9.95

ATARI XL

THE NEW ATARI 64K 800XL £129

EVERYTHING YOU WANT FROM A HOME COMPUTER

1. **ATARI 64K 800XL - £129:** The Atari 800XL has many facilities and includes such advanced specifications that you will be amazed by its performance. At the new reduced price of only £129 inc VAT for a full specification 64K computer with a proper full stroke keyboard, we believe that the 800XL cannot be beaten. Compare Atari with the competition, just look at these specifications:-

   COLOUR CAPABILITIES: 16 colours and 16 intensities giving 256 different colours (all of the 256 colours can be displayed at the same time).
   OPERATING SYSTEM: 24K ROM including Atari Basic programming language and a self diagnostic test program.
   KEYBOARD: Full stroke design with 62 keys including help key and 4 special function keys, international character set and 29 graphics keys.
   SOUND: 4 independent sound synthesisers each capable of producing music across a 3½ octave range or a wide variety of special sound effects. (Additional programming can achieve an octave range of up to nine octaves!)
   DISPLAY: 11 graphic modes and 5 text modes. Up to 320×192 resolution. Maximum text display 24 lines by 40 columns.
   SPECIAL ATARI INTEGRATED CIRCUITS: GTIA for graphics display. Pokey for sound and controller ports. Antic for screen control and I/O (Input/Output).
   CPU: 6502C microprocessor - 0.50 microsecond cycle and a clock speed of 1.79 MHz.
   EXTENDED GRAPHICS FUNCTIONS: High resolution graphics. Multi-coloured character set. Software screen switching. Multiple redifined character sets. Player missile (sprite) graphics. Fine screen scrolling. Changeable colour registers. Smooth character movement. Simple colour animation facilities.
   PROGRAMMING FEATURES: Built in Atari Basic programming language supporting peek, poke and USR plus at least 8 other languages available. The help key will provide additional information and menu screens with certain software. Full on-screen editing is available as well as syntax checking on entry.
   INPUT/OUTPUT: External processor bus for expansion with memory and peripherals. Composite video monitor output. Peripheral port for direct connection to Atari standard peripherals. Software cartridge slot is included as well as 2 joystick controller ports.
   SOFTWARE: Over 1,500 items of software are available including self teaching programs with unique voice over. The range of programs includes Education, Home Management & Programming aids. There is also APX (Atari Program Exchange) and of course Atari's famous entertainment software now at only £9.95. In addition there is a host of support and help available from specialist Atari magazines like Antic and Analog and from over 75 Atari books/manuals.
2. **ATARI 400 16K GAMES MACHINE - £29:** We have several Atari 400 games consoles/computers with 16K RAM. The price is £29 (for a reconditioned model) or £39 for a new machine. Both come with 12 months guarantee. The Atari 400 can play all 800XL ROM cartridge games and is expandable up to 48K RAM. Computer upgrade with Basic Programming Kit (£30) optional extra.
3. **ATARI 1010 PROGRAM RECORDER - £34:** For low cost storage and retrieval capability. Data transmission 600 baud. Storage capability 100K bytes on a sixty minute cassette. Track configuration four track, two channels (digital and audio). Auto record/playback/pause control/unique soundthrough facility. Built in accidental erasure prevention, automatic shutoff and 3 digit tape counter.
4. **ATARI 1050 DUAL DENSITY DISK DRIVE - £199:** 5¼" disks holding 127K randomly accessible bytes provide both expansion and flexibility for your 400/800 or XL system with new 'helpful' DOS 3. All customers who purchase a Disk Drive from Silica Shop will be automatically given a FREE set of 100 programs on 3 Disks recorded on both sides.
5. **ATARI 1020 COLOUR PRINTER - £99:** Printer and Plotter with four colour graphic print capability. 40 column width printing at 10 characters per second. Can print 5, 10 and 20 characters per inch. 64 character sizes. Prints text in 4 directions. Choice of line types.
6. **ATARI 1027 LETTER QUALITY PRINTER - £249:** For word processing letters in professional type. Print speed of 20 chars per second.
7. **ATARI TOUCH TABLET - £49:** Enables you to draw and paint pictures on your T.V. screen, with the touch of a stylus.
8. **ATARI TRAK BALL CONTROLLER - £19.95:** Enables cursor movement in any direction and adds arcade realism to your games.
9. **ATARI SUPER CONTROLLER - £9.95:** The ultimate joystick with double fire button to give you a greater competitive edge in your games.

SILICA SHOP ARE THE No1 ATARI SPECIALIST

Silica Shop are now firmly established as the No 1 Atari retail/mail order and wholesale specialist in the U.K. We already offer our service to over 120,000 customers, 10,000 of whom have purchased Atari Home Computers. Because we specialise (and with a turnover of £1.5 million), we are able to keep prices low by bulk purchases. Ring one of our 45 staff and we will be glad to be of service to you. Complete the coupon below and we will send you our Atari pack with our 16 page price list and XL colour catalogue:

EXTENDED TWO YEAR GUARANTEE: We are an Atari Service Centre, able to service and repair Atari equipment and have added a 12 month guarantee to the year offered by Atari, giving you a full 2 year guarantee on your new XL computer.

SPECIALIST SUPPORT: Our technical staff are always available on the telephone to help and advise you. We endeavour to hold stocks of every Atari compatible item available in the U.K. and we stock over 75 Atari books and manuals.

AFTER SALES SERVICE: When you purchase your equipment from Silica, your name will be automatically added to our mailing list. You will then receive price lists, newsletters and details of new releases and developments, as well as special offers which are exclusive to Silica Atari Computer Owners.

LOW PRICES: Our prices include VAT and are extremely competitive. We will normally match any lower price offered by our competitors.

FREE COMPUTER OWNERS CLUB: This is open to all Atari computer owners irrespective of where you purchased your equipment. Membership is FREE and entitles you to receive bulletins giving details of new releases and developments. Send now for your FREE information pack, price list & colour catalogue.

PAYMENT: We accept cash, cheques, postal orders and all Credit Cards. We also offer credit facilities over 1, 2 or 3 years, please write for a written quotation.

NEXT DAY DELIVERY - FREE: All goods despatched from Silica Shop are normally sent by first class post or parcel post FREE OF CHARGE. As a special introductory offer for a limited period only we will be sending all Computers and Disk Drives by a next day Securicor delivery service at our own expense.

So fill in the coupon below with a literature enquiry or order and begin to experience a specialist Atari service that is second to none.

SILICA SHOP LTD, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX Tel: 01-309 1111

ORDER NOW-OR SEND FOR A FREE COLOUR BROCHURE

To: SILICA SHOP LTD, Dept PSIX 0185, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX Telephone: 01-309 1111

LITERATURE REQUEST:

☐ Please send me your FREE colour brochures and 16 page price list on Atari Computers.

☐ I own a .... Videogame ☐ I own a .... Computer

Mr/Mrs/Ms: .... Initials: .... Surname ....

Address: ....

....

.... Postcode: ....

ORDER REQUEST:

PLEASE SEND ME:

☐ 800XL 64K Computer	£129
☐ 400 16K Games Machine	£29/£39
☐ 1010 Program Recorder	£34
☐ 1050 127K Disk Drive	£199
☐ 1020 4 Colour Printer	£99
☐ Letter Quality Printer	£249
☐ Touch Tablet+Cartridge	£49
☐ Trak Ball	£19.95
☐ Super Controller	£9.95

ALL PRICES QUOTED ARE INCLUSIVE OF VAT - POSTAGE & PACKING IS FREE OF CHARGE

☐ I enclose Cheque/P.O. payable to Silica Shop Limited for the following amount £..............................

☐ CREDIT CARD - Please debit my:
Access/Barclaycard/Visa/American Express/Diners Club Card Number ....

Turn of the Year

This time last year I wrote an article entitled Turn of the Year which took a look back at the year just ending. The year which is now drawing to a close has not been a particularly good one for Atari and their followers so this time let's cast an eye forward.

Over the past couple of months there have been many rumours about what Atari will be doing next year, much of it pure speculation, so to try and give you a factual report of what you will see from Atari in 1985, I spoke to Jon Dean, Computer Products Manager in the U.K. Marketing Division. Sounding positive and enthusiastic about the future he told me "It is Atari's intention to provide the very latest technology at very competitive prices". Some of you may feel that that is just good sales talk so read on to find out what Atari *will* be doing in 1985.

To start with let's take a look at what Atari are doing now. Most importantly they are advertising, and spending £2 - 3 million up to Christmas, to make people aware of Atari. They readily admit that they may not come out on top over Christmas but part of the campaign is to make people aware once again of the Atari name so that the new products to be introduced in 1985 will get off to a flying start. During 1985 they will be spending considerably in excess of the present advertising budget to bring new products to the home and business markets and are likely with their new 16-bit machine, to create a new and exciting 'middle' market that will blur the lines between home and business use.

The Company will operate on three levels in future. *They will continue to support the XL series* and will introduce refinements to the range. I put to Jon Dean the recent report of a 128k 800XL but he was unable to confirm or deny this when we spoke as no details or specifications had been provided to Atari in the U.K. New products will be introduced and Atari is actively encouraging third party software producers as well as planning some titles of their own. Although termed the "lower-end" market, the XLs will not be thought of as 'entertainment only' machines. The entertainment side will not be overlooked but there will shortly be a range of General Business applications and a range of Educational software which will, subject only to memory restrictions, be compatible with the XL *and the 400/800 computers*. Some of these titles will be Atari's own but most will be produced by third parties with the full support of Atari

Of immediate interest to disk drive owners is the imminent release by Atari of a disk based Adventure set in "sleazy down-town New Jersey". Titled THE PAYOFF it is a text adventure intended to keep you busy for weeks or months.

Continued support of the present range will be what many of you are looking for but the really exciting developments will be in the 'middle' market where for the first time Atari will really close the gap between the serious home user and the small business. To be introduced at the CES show in the States in January and expected here in April/May will be a new 16-bit machine very similar to the Apple Mackintosh but in colour. It will be driven by TOS - the Tramiel Operating System - and be supported with a disk drive, probably 3½ inch, and a monitor. The price for this machine? Around £400. The latest technology at very competitive prices. The machine will be fully supported with peripherals such as memory expansions allowing storage in Megabytes.

What about software? Atari are supporting development of software from some of the major U.K. producers currently working in the 16-bit field to provide general business programs as well as specific business applications. There will also be entertainment software and educational software including programs currently being developed at University level.

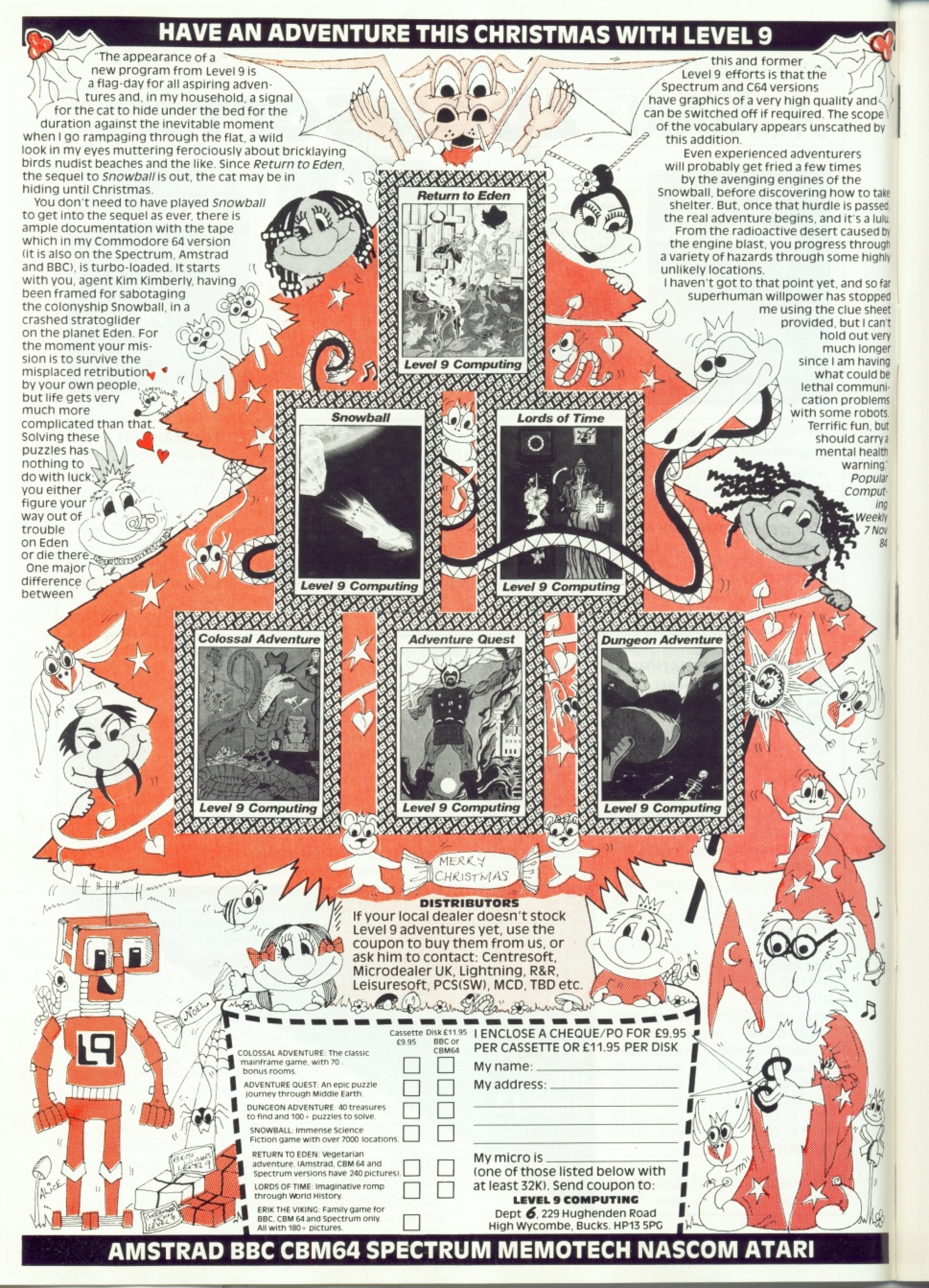
Sadly, but understandably, this machine will not be compatible with any of the present Atari machines but at the proposed price there is a strong case for the serious user to either trade in their present system or run two systems! For the first time truly 'serious' applications will be available to the ordinary home user but if you only used the 16-bit machine for top-class entertainment at first the enormous potential for wider use will be there. Don't forget many of us paid almost this much for a 400 and considerably more for an 800. Imagine Star Raiders in 16-bit! Imagine also switching straight over to a Megabyte database!

Can there be more? At the top end Atari is expected to introduce in late summer a 32-bit machine to take the larger business market by storm. Look for the best 32-bit machine around at the moment. Would you buy it at one-fifth of the price? That is what Atari are hoping to make possible in 1985.

Those are the three sides of the new Atari. A company which now recognises that the U.K. and European markets are distinct from the U.S. XL machines will be assembled in Ireland from December and full manufacture of all machines for the European market is expected there around Spring. No more product shortages because the U.S. has to come first.

Jon Dean said I was spot on with the Editorial a couple of issues ago when I said "Atari is dead. Long live Atari". The Company that we all despaired over during the past couple of years is gone. In its place is a vibrant new Atari that will continue to support existing products and bring to the world the very best computing technology that we have come to expect from the name Atari.

by Les Ellingham


HAVE AN ADVENTURE THIS CHRISTMAS WITH LEVEL 9
"The appearance of a new program from Level 9 is a flag-day for all aspiring adventures and, in my household, a signal for the cat to hide under the bed for the duration against the inevitable moment when I go rampaging through the flat, a wild look in my eyes muttering ferociously about bricklaying birds nudist beaches and the like. Since Return to Eden, the sequel to Snowball is out, the cat may be in hiding until Christmas.
You don't need to have played Snowball to get into the sequel as ever, there is ample documentation with the tape which in my Commodore 64 version (it is also on the Spectrum, Amstrad and BBC), is turbo-loaded. It starts with you, agent Kim Kimberly, having been framed for sabotaging the colonyship Snowball, in a crashed stratoglider on the planet Eden. For the moment your mission is to survive the misplaced retribution by your own people, but life gets very much more complicated than that. Solving these puzzles has nothing to do with luck; you either figure your way out of trouble on Eden or die there.
One major difference between this and former Level 9 efforts is that the Spectrum and C64 versions have graphics of a very high quality and can be switched off if required. The scope of the vocabulary appears unscathed by this addition.
Even experienced adventurers will probably get fried a few times by the avenging engines of the Snowball, before discovering how to take shelter. But, once that hurdle is passed, the real adventure begins, and it's a lulu. From the radioactive desert caused by the engine blast, you progress through a variety of hazards through some highly unlikely locations.
I haven't got to that point yet, and so far superhuman willpower has stopped me using the clue sheet provided, but I can't hold out very much longer since I am having what could be lethal communication problems with some robots. Terrific fun, but should carry a mental health warning."
Popular Computing Weekly 7 Nov 84
Return to Eden
Level 9 Computing
Snowball
Level 9 Computing
Lords of Time
Level 9 Computing
Colossal Adventure
Level 9 Computing
Adventure Quest
Level 9 Computing
Dungeon Adventure
Level 9 Computing
MERRY CHRISTMAS
DISTRIBUTORS
If your local dealer doesn't stock Level 9 adventures yet, use the coupon to buy them from us, or ask him to contact: Centresoft, Microdealer UK, Lightning, R&R, Leisuresoft, PCS(SW), MCD, TBD etc.
NOEL
Cassette £9.95
Disk £11.95 BBC or CBM64
COLOSSAL ADVENTURE: The classic mainframe game, with 70 bonus rooms.
ADVENTURE QUEST: An epic puzzle journey through Middle Earth.
DUNGEON ADVENTURE: 40 treasures to find and 100+ puzzles to solve.
SNOWBALL: Immense Science Fiction game with over 7000 locations.
RETURN TO EDEN: Vegetarian adventure. (Amstrad, CBM 64 and Spectrum versions have 240 pictures).
LORDS OF TIME: Imaginative romp through World History.
ERIK THE VIKING: Family game for BBC, CBM 64 and Spectrum only. All with 180+ pictures.
I ENCLOSE A CHEQUE/PO FOR £9.95 PER CASSETTE OR £11.95 PER DISK
My name:
My address:
My micro is
(one of those listed below with at least 32K). Send coupon to:
LEVEL 9 COMPUTING
Dept 6, 229 Hughenden Road
High Wycombe, Bucks. HP13 5PG
AMSTRAD BBC CBM64 SPECTRUM MEMOTECH NASCOM ATARI

CAROLS

Brighten up Christmas with a selection of Carols. This program presents a menu of well known carols or Christmas music which you can choose by selecting a letter or which will automatically play through. The sound of the music can be altered to your liking by holding down or pressing the space bar or the OPTION and SELECT keys. Keep pressing these keys for different effects.

The program will automatically check the data to ensure that you have typed it correctly and will prompt you for a cassette or disk copy. If cassette is chosen, the program will create a boot tape which can be run by holding down the START key whilst turning the computer on. Disk users will have a file named CAROL which should be loaded from Option L on the DOS 2 menu (binary load).

Carols will run in 16k although there will be some interference with the screen as the program loads.

by A.J.Costick

```
1 REM *******************************
2 REM *          CAROLS             *
3 REM *            by               *
4 REM *       A.J.COSTICK           *
5 REM *  -----------------------    *
6 REM *  PAGE 6 MAGAZINE - ENGLAND  *
7 REM *******************************
10 REM
20 TRAP 20:? "MAKE CASSETTE(0),OR DISK
(1)";:INPUT DSK:IF DSK>1 THEN 20
30 TRAP 40000:DATA 0,1,2,3,4,5,6,7,8,9
,0,0,0,0,0,0,0,10,11,12,13,14,15
40 DIM DAT$(91),HEX(22):FOR X=0 TO 22:
READ N:HEX(X)=N:NEXT X:LINE=990:RESTOR
E 1000:TRAP 120:? "CHECKING DATA"
50 LINE=LINE+10:? LINE:READ DAT$:IF LE
N(DAT$)<>90 THEN 220
60 DATLIN=PEEK(183)+PEEK(184)*256:IF D
ATLIN<>LINE THEN ? LINE;" MISSING":END
70 FOR X=1 TO 89 STEP 2:D1=ASC(DAT$(X,
X))-48:D2=ASC(DAT$(X+1,X+1))-48:BYTE=H
EX(D1)*16+HEX(D2)
80 IF PASS=2 THEN PUT #1,BYTE:NEXT X:R
EAD CHKSUM:GOTO 50
90 TOTAL=TOTAL+BYTE:IF TOTAL>999 THEN
TOTAL=TOTAL-1000
100 NEXT X:READ CHKSUM:IF TOTAL=CHKSUM
 THEN 50
110 GOTO 220
120 IF PEEK(195)<>6 THEN 220
130 IF PASS=0 THEN 170
140 IF  NOT DSK THEN 160
150 PUT #1,224:PUT #1,2:PUT #1,225:PUT
 #1,2:PUT #1,23:PUT #1,49:CLOSE #1:END
160 FOR X=1 TO 2:PUT #1,0:NEXT X:CLOSE
 #1:END
170 IF  NOT DSK THEN 200
180 ? "INSERT DISK WITH DOS,PRESS RETU
RN";:DIM IN$(1):INPUT IN$:OPEN #1,8,0,
"D:CAROL"
190 GOTO 210
200 ? "READY CASSETTE AND PRESS RETURN
";:OPEN #1,8,128,"C:":RESTORE 230:FOR
X=1 TO 42:READ N:PUT #1,N:NEXT X
210 ? :? "WRITING FILE":PASS=2:LINE=99
0:RESTORE 1000:TRAP 120:GOTO 50
220 ? "BAD DATA: LINE ";LINE:END
230 DATA 0,30,208,47,34,49,169,60,141,
2,211,169,1,133,9,169,34,133,10,169,49
,133,11,169,0,141,231,2,133,14,141,47
240 DATA 2,169,64,141,232,2,133,15,24,
96
1000 DATA FFFF0030813E0000000000000000
555555555555555500405054555555555000000
C0C555555500000555555555,986
1010 DATA 55000000AA2A0A02000000AAAAA8
A0800000AAAAAA2A0A020000AAAAAAA2820000
AAAAAAAAAAAAA820AAAAAAAA,357
1020 DATA AA2A0A0200AAAAAAA8A080000000
AAAA2A0A0200000000AAA8A0800000000000AA00
000000008000000000000000,865
1030 DATA 00000000000505000000000000005050
AA000000000000000AA00000000000000A02A2A
000000000000808080000000,153
1040 DATA 00000200000000000000AABEBEAA
00000000000000000AABEBEAAAABEBEAAAABEBE
AA7070477435470024427435,841
1050 DATA C70024070745F63305050505541D0
3070707070477435707042002602020202020202
0202020202020241EA3048,260
1060 DATA A9308D0AD48D09D4A9D28D18D068
40A922850CA931850D4C74E4D88D9A33A9038D
32028D1DD0A9208D07D4A921,322
1070 DATA 8D6F02A93E8D2F02A0DDA232A907
205CE4A9078D0002A9318D0102A9C08D0ED4A9
008D00D08D01D08D97338D08,887
1080 DATA D2AA9D00D29D04D2E8E004D0F5AA
9D00249D00259D00269D0027E8D0F1BDBE349D
5824BDDE349D6025E8E020D0,708
1090 DATA EFA9008DC8028DC7028DC602A9D6
8DC502A91A8DC402A91F8DC002A9368DC102A9
018D92338D9333D8AD9733D0,139
1100 DATA 2DA9EA8D3002A9308D3102203F3E
A9FF8DFC02ADFC02C9FFF0F9A200DD0337F019
E8E00DD0F6A9FD20A4F64CCA,306
1110 DATA 31EE9833AE9833E00DD002A2008E
9833A9008D8F338D8E338D8C33BDE9338D8D33
8A0AAABD9B3385E0BD9C3385,702
1120 DATA E1BDB53385E2BDB63385E3BDCF33
8DD930BDD0338DDA30A9D08D3002A9308D3102
A9018D8B33A97E8D00D08D01,461
1130 DATA D0AD0AD2C930B0F98D2002AD8B33
F02CAD2002D0F6AD0AD28D12D08D13D08D16D0
AD9633C97ED00D8D01D0A97D,284
1140 DATA 8D00D08D9633D0CC8D01D0A97ED0
F18D00D08D01D0A9FF8D2002AD1FD0C906F00D
AD2002D0F4A9018D97334CB7,82
1150 DATA 31A900F0F6A901AE1FD0E005D008
4D93338D9333100AE003D00E4D92338D9233A9
FF8D8B338DFC02AEFC02E021,350
1160 DATA D01BEE9433AD9433C9A6D0E7A9A0
8D9433D0E0AD8B33F05710BECE8B33AC8E33EE
8E33CC8C33B03ABEFA36CC90,860
1170 DATA 339003AE9433AD9133D003AE9533
8E01D28AC9A0F00AAC9333D004A2A0D001CA8E
03D28E05D2AC9233D002A9A0,422
1180 DATA 8D07D24C62E4D0B1A9008D8E33AC
8F33CC8D339017A9008D8B338D01D28D03D28D
05D28D07D28D8F334C62E4EE,894
1190 DATA 8F33B1E28D8C33B1E08D00D28D91
3318690018D06D2AD9133A200DDFE34F003E8D0
F8BD26358D02D2BD4D351869,469
1200 DATA 018D04D2AD1FD0C906D0A1F0AE00
00000000008000101A2A000000000001D377D37
E9377138AB382B3999396B3A,982
1210 DATA FD3A673BEB3BD53C513D4D37B337
2D388E38EB38623902 3AB43A323BA93B603C13
3DC83D00262826502678 26A0,959
1220 DATA 26C826F026182740276827902 7B8
27E027303644 1D403769493542753E7000000
00000000000018191800 0000,477
1230 DATA 000000000203040000000000018
1918000000000000000000000000000000000000
171919191919000000000001,708
1240 DATA 0101000000001919191919170000
00000000000000000000000000000000191919
191918000000101010000018,34
1250 DATA 1919191919000000000000000000
00000000000000000000000000171919190000
000101010000191919170000,358
1260 DATA 0000000000000000000000000000
0000000005060708090A0B0C0D0E0001010100
0E05060708090A0B0C0D0000,551
```

continued overleaf

CAROLS continued

```
1270 DATA 000000000000000080818181C3C3C7C
7E66666643C3C3C3C3476666642C3C383818
1810000010181C3C3C7E7E7E,582
1280 DATA 7E7E7E7C3C3C3C18100000000000000
00000000000000000000191A1C1E1F21232528
2A2D2F3235393C4044484C51,304
1290 DATA 555B60666C727980889099A2ADB6
C1CCD9E6F32F3539C1D9B6ADE6C19088F38880
99C1D9B6ADE6C19088F38880,446
1300 DATA 99C1D9B6ADE6C19088F388809960
6C72A2A288D999F3D988A288A2E6A2A288D999
F3D988A288A2E6A2A288D999,107
1310 DATA F3D988A288A2E600006368726973
746D6173006361726F6C730000210E0033292C
252E34002E29272834FF220E,850
1320 DATA 00272F2F24002B292E270037252E
2325332C2133FF230E00272F240032253334 00
3925002D253232390027252E,648
1330 DATA 342C252D252EFF240E003728292C
2500332825302825322433003721342328FF25
0E002F00232F2D2500212C2C,674
1340 DATA 003925002621293428263 52CFF26
0E002F2E232500292E00322F39212C00242136
29240733002329343 9FF270E,648
1350 DATA 002A292E272C250022252C2C33FF
280E003428250026293233340 02E2F37252C2C
FF290E0021372139 00292E00,625
1360 DATA 21002D212E272532FF2A0E002321
322F2C002F26003428250024323 52DFF2B0E00
33212E342100232C21353300,569
1370 DATA 293300232F2D292E0700342F0034
2F372EFF2C0E003428250028 2F2C2C3900212E
2400342825002936 39FF2D0E,565
1380 DATA 0026322F33343900342825 00332E
2F372D212EFF00002F70740E0C33656C0E0607
3370616365 07616C74657200,158
1390 DATA 736F756E64FF0007337461727407
746F0072657475726E00746F0074686973006C
697374FFA9A8A8A7A7A6A5A3,72
1400 DATA A23F15123A2A383D390D01050025
23080A2F283E2D0B102E162B17514851605148
51603535403C3C5148483C40,373
1410 DATA 485148516048483C404851485160
35352D35403C2F3C5160515B6C797900240C18
48240C184830184830184830,203
1420 DATA 18240C18240C184830 18240C1824
0C18483018240C184848240C18240C18483030
515151485151 6C606C605551,382
1430 DATA 515151514851516C606C60555151
353C4048404851606C6055515 16C6C60555151
48353C4048513C51000C0C0C,746
1440 DATA 0C0C0C180C0C0C0C18180C0C0C0C
0C0C180C0C0C0C18180C0C0C0C0C0C180C0C0C
0C18180C0C0C0C0C0C180C0C,406
1450 DATA 0C0C181830306060404040485155 60
6C60555148406060404040485155606C60555148
40403C48403C352F40485160,627
1460 DATA 5551485148403C404048515560 51
5560485148403C352F40485155600000C0C0C0C
0C0C0C0C0C0C0C0C0C240C0C,929
1470 DATA 0C0C0C0C0C0C0C0C0C0C0C240C0C
0C0C0C0C0C0C0C0C0C0C0C240C0C180C0C0C0C
0C0C1806060C180C0C0C0C0C,541
1480 DATA 0C0C0C0C0C24305B48485 15B4444
4851483C3C403C48353C4448515B6048515B5B
605B0010180810101010 1010,956
1490 DATA 10101010301018081010101010 10
10101010303051516C51486C4048403C404851
5155605551484055606C6C35,394
1500 DATA 353C403C404840514855606C5151
5551485 16C404048403C4048403C40485155 51
3C404851510014281414 2828,367
1510 DATA 141414142814142814141414 1414
281E0A400A1E141428281414141 41E0A141414
14141428141414141414 2814,451
1520 DATA 141414141428141428 1E0A50306C
555151515551484851514035404048515551 6C
55515151555148485151 4035,336
1530 DATA 404048515551 2F2F35513C3C402F
2F3540404851555100181824 0C0C0C0C0C1818
1818240C0C0C0C0C30181824,257
1540 DATA 0C0C0C0C0C18181818240C0C0C0C
0C30181824 0C181830181824 0C0C0C0C0C3030
51512F353C5151515 12F353C,795
1550 DATA 4848482D2F35402823282D352F51
512F353C51515151 2F353C4848482D2F352828
282823282D353C282F2F2F2F,268
1560 DATA 2F2F2F283C352F2D2D2D2D2D2F2F
2F2F2F35352F35282F2F2F2F2F2F2F283C352F
2D2D2D2D2D2F2F2F2F28282D,382
1570 DATA 353C000A0A0A0A0A1E05050C0C0C
0C1E0A0A0A0A0A1E0A0A0A0A0A1E0A0A0A0A0A
1E05050A0A0A0A1E0A0A0A0A,23
1580 DATA 0A0A0A0A0A0A0A0A0A14140A0A14
0A0A140A0A0F05280A0A0A0A0A0A0A05050A0A
0A0A14140A0A140A0A140A0A,573
1590 DATA 0F05280A0A0A0A0A0A0A05050A0A
0A0A2830606C796C605B5148403C4048514840
3C40485148403C515B60606C,36
1600 DATA 796C605B5148403C40485148403C
40485148403C515B60606C796C605B513C4048
48513C40485148403C515B60,614
1610 DATA 00080818080808200808101010 20
080810101010101010101020080818080808 20
0808101010200808101010 10,270
1620 DATA 1010101010200808180808082008
0820103010101010101010101020307 95B5B51
485B5B48443C3C35445 14844,54
1630 DATA 443C48485B48516C5B60795B5B51
485B5B48443C3C354451484444 3C48485B4851
6C605B0020202010102020 10,124
1640 DATA 102020204010102020202020 1010
20202040202020101020201010202020401010
20202020201010202020 4030,500
1650 DATA 5B514848484448444 85B5B514848
4848444844448514844 3C3C3C353C4448515148
443C3C3C3532353C44353C44,600
1660 DATA 483C4448515B514848484844 4844
48515B515B5B00301020101008081070101010
101010100808105010101010,688
1670 DATA 10101008081070101010101010 10
08081020080810200808107030101010101008
081060080810108030282F2D,876
1680 DATA 2828282 31F1E1E2F2D2828282328
2D2D2F283C2F352D403C282F2D282828231F1E
1E2F2D282828 23282D2D2F28,757
1690 DATA 3C2F352D403C1E1A1E1F1E23231E
1A1E1F1E231A171A1C1A1F1F1F1F1E1A1E1F23
2828282F2D282828231F1E1E,348
1700 DATA 2F2D282828 23282D2D2F283C2F35
2D1A1E1E1A171A1E1700100808101808080810
20080810101008081020101 0,535
1710 DATA 101010201070100808101808 0808
1020080810101008081020101010101020 1070
10101010101020101010 1010,463
1720 DATA 301010101010101010 0808101010
102018080808101808080810200808101010 08
0810201010101010201010 08,191
1730 DATA 080808102030515151512F354051
5151512F35353C40485140406060 6C5148403C
404851515151512F35405151,125
1740 DATA 5151512F35353C40485140606 06C
5148403C40485128001 40A0A1414141E0A0A0A
14142 80A0A0A0A140A0A0A0A,36
1750 DATA 140A0A0A0A141428140A0A141414
140A0A0A0A141428 0A0A0A0A14140A0A140A0A
0A0A141414 1E3051605B513C,123
1760 DATA 403C353C40485140 3C353C404848
513C6051485 15B605B5151605B513C403C353C
404851403C353C40 4848513C,301
1770 DATA 6051485 15B606C797948483C3C40
4851605B48515B60606C6C5151404035354035
3C4048515151605B513C403C,892
1780 DATA 353C40485140 3C353C404848513C
6051485 15B606C793C00201808102008081010
101030080810101008081010,966
1790 DATA 1008081010101040201808102008
0810101010300808101010080810101008 0810
10101030101010101010101 0,750
1800 DATA 10101010103010101010101010 10
08081010101020202018081020080810101010
30080810101008081010 1008,526
1810 DATA 08101010101020 2030A98885E0A935
85E1A92685E3A9001869 0485E2A200A000B1E0
C9FFF00591E2C8D0F5A5E218,43
1820 DATA 692885E2A5E3690085E318C89865
E085E0A5E1690085E1E8E00FD0D4600000000 00
000000000000000000000000,302
```

□

The Moving Triangle!

```
0 REM ******************************
1 REM ***   BY LUKE HOLLINGBERY   ***
2 REM ***         (AGE 14)        ***
3 REM ******************************
10 GRAPHICS 11
15 A=1:B=1
20 C=1:Y=0:X=0
25 COLOR C
30 PLOT X+10,Y:DRAWTO X+20,Y+30:DRAWTO
 X,Y+30:DRAWTO X+10,Y
40 IF X=59 THEN A=-1
50 IF X=0 THEN A=1
60 IF Y=161 THEN B=-1
70 IF Y=0 THEN B=1
80 X=X+A:Y=Y+B
90 IF C<30 THEN C=C+1:GOTO 25
100 C=1:GOTO 25
9999 GOTO 9999
```

....GTIA

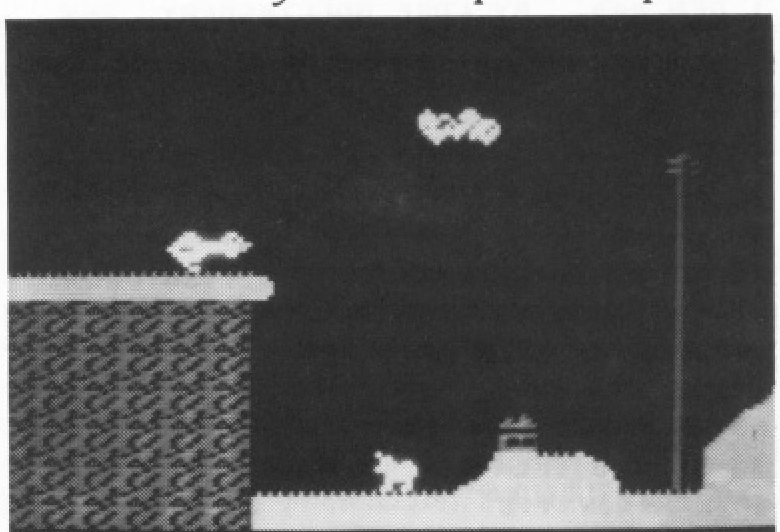
by Luke Hollingbery

```
0 REM ******************************
1 REM ***   BY LUKE HOLLINGBERY   ***
2 REM ***         (AGE 14)        ***
3 REM ******************************
10 GRAPHICS 9
20 X=39:Y=95:C=1:A=1:B=1
30 COLOR C
40 PLOT 39,95-Y:DRAWTO X+39,Y+95:DRAWT
0 39-X,Y+95:DRAWTO 39,95-Y
50 PLOT 39,95+Y:DRAWTO 39-X,95-Y:DRAWT
0 X+39,95-Y:DRAWTO 39,95+Y
500 Y=Y-B:X=X-A:C=C+1
510 IF C=14 THEN C=1
520 IF X=-39 THEN A=-1:X=-38
530 IF X=39 THEN A=1:X=38
540 IF Y=-95 THEN B=-1:Y=-94
550 IF Y=95 THEN B=1:Y=94
700 GOTO 30
```

FLIGHT of the SWAN

by Christopher Jephcott

Flight of the Swan is the other winner of our scrolling competition chosen because of its original theme. Like Rescue Mission, this game requires 32k.



THE GAME

The game follows the flight of a migrating swan from a mud bank, over hills and through caverns avoiding telegraph poles and clouds etc. until final splashdown on a distant lake.

The swan has three lives and to survive must eat four objects including a glucose tablet, a kipper, a worm and a can of beans(!). These objects are all coloured pink. Once all four, or a combination of any four, are eaten, the objects turn yellow and in this condition will increase the swan's metabolic rate to such an extent that he dies. Once the four objects have been eaten, the swan has sufficient energy to make it through the caverns. Throughout the game, avoid anything that is not pink until finally the lake is in view where you may safely land.

The swan is controlled by the joystick moving up, down, diagonally or forwards. He cannot move backwards. There are two difficulty levels with level 2 being very difficult. Once three lives are lost, System Reset will re-run the game.

The first game after loading will take about 15 seconds to initialise but after this the game will re-run immediately.

TYPING IT IN

The game should be typed and saved in two parts as shown. Cassette users should CSAVE the first listing and then leave the tape in place in the cassette. Next type in the second listing and CSAVE it immediately after the first. Wind back the tape and CLOAD. When RUN is typed the first program will automatically load in the second. Type RUN and away you go.

Disk users should firstly change line 30 of the first listing to read RUN "D: SWAN.BAS" and save the program as "D: SWAN". Type in and SAVE the second listing with the filename "D: SWAN.BAS" and then type RUN "D: SWAN". The game should load and play.

```
0 REM ********************************
1 REM *       FLIGHT OF THE SWAN      *
2 REM *              by               *
3 REM *     Christopher Jephcott      *
4 REM *  -------------------------    *
5 REM *  PAGE 6 MAGAZINE - ENGLAND    *
6 REM ********************************
7 REM
8 GRAPHICS 0:POSITION 17,10:? "Please 
Wait...":? :? :? :? :? :? :? :? :? :?
:? :? :? :? :? :? :? :? :?
10 FOR Z=1 TO 63:FOR I=0 TO 7:READ A:P
OKE 132*256+Z*8+I,A:NEXT I:NEXT Z
20 POKE 15000,0
30 POKE 764,12:CLOAD :REM DISK USERS
 REPLACE WITH RUN D:SWAN.BAS
100 DATA 1,3,7,15,31,63,127,255,128,19
2,224,240,248,252,254,255
110 DATA 12,76,36,28,12,60,35,97,140,1
08,84,124,28,14,27,49,48,50,36,56,48,1
12,200,140
120 DATA 1,1,3,3,7,15,63,255,128,128,1
92,192,224,240,252,255,0,96,240,110,22
1,187,46,4,0,64,236,242,165,127,57,16
125 DATA 0,0,1,35,119,255,254,46,32,24
0,248,254,255,127,62,6
130 DATA 0,0,0,24,92,238,255,0,63,126,
253,3,251,171,171,251,251,251,171,171,
251,171,171,251
140 DATA 0,0,85,255,255,255,255,255,0,
0,0,1,3,3,3,1,0,0,0,224,240,240,240,22
4
150 DATA 0,33,81,255,63,14,6,2,128,113
,83,54,159,234,119,30,0,0,3,15,19,127,
255,127,3,7,249,241,254,254,254,254
160 DATA 1,7,31,63,127,127,255,255,128
,224,248,252,254,254,255,255,255,255,2
55,255,255,255,255,255
170 DATA 124,124,76,84,76,84,76,124,2,
13,31,6,2,98,182,28,0,0,0,56,125,222,1
25,56,0,0,31,62,124,1,127,126
180 DATA 0,0,62,124,250,6,244,240,24,6
0,247,52,247,52,52,52,255,126,60,24,0,
0,0,0
190 DATA 52,52,52,52,52,52,52,52,3,4,3
1,255,14,1,0,0,129,227,252,255,252,192
,192,64
```

```
200 DATA 0,0,0,0,251,125,62,31,0,0,0,0,248,248,240,112
210 DATA 128,96,118,255,63,62,34,102,44,110,255,0,255,201,201,255,64,128,238,191,223,150,17,17
220 DATA 125,219,173,247,221,187,183,221,85,255,255,255,255,255,255,255
230 DATA 16,63,127,255,0,127,77,79,0,252,254,255,0,254,254,254,16,16,16,56,56,124,126,255
240 DATA 157,149,203,255,255,219,153,165,0,0,142,127,172,222,30,63,16,16,80,125,125,255,255,255
250 DATA 16,16,20,52,189,253,255,255,0,0,0,24,60,126,126,255,8,16,24,24,24,60,126,255,24,24,24,60,60,126,255,255
260 DATA 129,129,195,231,231,255,255,255,0,0,0,3,15,31,127,255,1,99,243,255,255,255,255,255
270 DATA 255,126,60,24,0,0,0,0,255,124,124,56,56,16,16,0,255,126,56,12,24,112,64,32
280 DATA 255,254,252,248,240,224,192,128,255,127,63,31,15,7,3,1,255,255,127,127,63,31,7,1
290 DATA 255,255,254,254,252,248,224,128,255,252,240,224,192,192,128,128,255,63,15,7,3,3,1,1
```

MAIN LISTING

```
0 DIM PM$(2048):DIM PLAYER$(62):G=0:POKE 832,6:DIM A$(4):LI=3:UN=0:D=0
1 PM$(1)=CHR$(0):PM$(2048)=CHR$(0):PM$(2)=PM$
2 DIM CLEAR$(128):CLEAR$(1)=CHR$(0):CLEAR$(128)=CHR$(0):CLEAR$(2)=CLEAR$
3 POKE 2,52:POKE 3,185:POKE 9,2:TRAP 30000
50 GOSUB 8000
1000 GRAPHICS 0:POKE 559,0:RT=PEEK(106):POKE 708,200:POKE 709,20:POKE 710,139:H=90:POKE 711,60
1040 T=RT-20:DM=256*T:FOR I=1536 TO 1538:POKE I,112:NEXT I:POKE 756,132
1050 FOR I=1539 TO 1572 STEP 3:POKE I,87:POKE I+1,0:POKE I+2,T:T=T+1:NEXT I
1060 POKE 1575,65:POKE 1576,0:POKE 1577,6:POKE 560,0:POKE 561,6
1080 POKE 559,46:GOSUB 3000
1081 IF D<>0 THEN 2000
1100 IF PEEK(15000)<>0 THEN 1249
1102 RESTORE 1120:BOT=DM+2816:FOR X=0 TO 255:READ Y,CHAR,FI,BO
1105 OFSET=DM+256*Y+X:POKE OFSET,CHAR
1110 FOR I=OFSET+256 TO BOT+X STEP 256:POKE I,FI:NEXT I:POKE BOT+X,BO:NEXT X
1111 RESTORE 1240:BOT=DM:FOR X=146 TO 219:READ Y,CHAR
1112 OFSET=DM+256*Y+X:POKE OFSET,CHAR
1113 FOR I=BOT+X-256 TO OFSET+X-256 STEP 256:POKE I,88:NEXT I:NEXT X
1114 RESTORE 1245:BOT=DM+2816:FOR Z=1 TO 16:READ X,Y,CHAR:SOUND 0,Z*10,10,10
1115 OFSET=DM+256*Y+X:POKE OFSET,CHAR:NEXT Z:SOUND 0,0,0,0
1117 POKE 15000,1
1120 DATA 5,15,104,104,5,15,104,104,5,15,104,104,5,15,104,104
1125 DATA 5,15,104,104,5,15,104,104,5,15,104,104,5,15,104,104,5,17,0,41
1130 DATA 10,0,0,41,10,0,0,41,10,229,0,41,10,0,0,41,10,6,0,24,9,102,24,24
1135 DATA 9,0,41,24,10,23,24,24,10,0,0,41,2,94,96,41,9,1,24,24,8,6,24,24,7,22,24,24
1140 DATA 6,1,24,24,6,41,24,24,6,41,24,24,5,1,24,24,4,218,24,24,5,41,24,24,5,2,24,24,6,2,24,24,7,2,24,24
1145 DATA 8,23,24,24,9,15,104,104,9,15,104,104,9,15,104,104,10,169,152,152,10,169,152,152,9,99,169,152
1150 DATA 9,100,169,152,10,169,152,152,9,15,104,104,9,15,104,104,9,7,24,24,10,2,24,24,2,94,96,41
1155 DATA 9,6,24,24,8,1,24,24,7,22,24,24,6,6,24,24,6,7,24,24,7,2,24,24,6,6,24,24,5,1,24,24,3,67,24,24,2,22,24,24
1160 DATA 2,41,24,24,2,23,24,24,3,7,24,24,4,2,24,24,5,7,24,24,5,6,24,24,4,1,24,24,3,217,24,24,4,2,24,24
1165 DATA 5,2,24,24,6,2,24,24,7,7,24,24,8,41,24,24,7,102,24,24,8,41,24,24,9,133,24,24,10,7,24,24,5,94,96,41
1170 DATA 10,0,24,41,10,103,0,41,9,22,24,24,8,6,24,24,7,131,24,24,8,2,24,24,9,7,24,24
1175 DATA 10,41,24,24,10,106,24,24,10,107,24,24,11,41,24,41,10,1,24,24,9,22,24,24,8,221,24,24,9,2,24,24,10,2,24,24
1180 DATA 10,6,24,24,9,1,24,24,8,22,24,24,7,6,24,24,7,7,24,24,8,41,24,24,0,0,0,41,0,0,0,41,6,16,0,41,6,15,0,41
1185 DATA 6,15,0,41,6,15,0,41,6,15,0,41,6,15,0,41,6,15,0,41,6,15,0,41,6,15,0,41,6,15,0,41,6,17,0,41,7,16,0,41
1190 DATA 7,15,0,41,7,15,0,41,7,17,0,41,0,0,0,41,0,0,0,41,0,0,0,24,8,22,24,24,7,6,24,24,7,41,24,24
1191 DATA 7,41,24,24,7,41,24,24,6,68,24,24,7,41,24,24
1195 DATA 6,1,24,24,5,6,24,24,5,41,24,24,4,219,24,24
```

continued overleaf

FLIGHT of the SWAN continued

```
1200 DATA 5,7,24,24,5,68,24,24,7,7,24,
24,8,23,24,24,9,15,104,104,9,15,104,10
4,10,169,152,152,10,169,152,152
1205 DATA 10,169,152,152,10,169,152,15
2,9,15,104,104,9,15,104,104,9,15,104,1
04,9,15,104,104
1210 DATA 8,70,104,104,7,65,104,104,6,
86,88,88,5,65,88,88,4,70,88,88,3,108,8
8,88,4,71,88,88,5,87,88,88,6,66,88,88
1215 DATA 7,71,88,88,8,66,88,88,9,71,8
8,88,10,88,88,88,9,70,88,88,8,65,88,88
,7,86,88,88,7,88,88,88,7,87,88,88
1217 DATA 8,66,88,88,9,116,88,88,8,70,
88,88,7,65,88,88,6,65,88,88,5,113,88,8
8,5,70,88,88,4,65,88,88,3,70,88,88
1219 DATA 2,115,88,88,3,66,88,88,4,71,
88,88,5,87,88,88,6,71,88,88,6,117,88,8
8,6,118,88,88,6,116,88,88,5,65,88,88
1221 DATA 4,65,88,88,3,70,88,88,2,113,
88,88,3,66,88,88,4,66,88,88,5,87,88,88
,6,66,88,88,7,71,88,88,8,87,88,88
1223 DATA 9,66,88,88,10,87,88,88,10,11
7,88,88,10,118,88,88,9,70,88,88,8,65,8
8,88,7,70,88,88,6,113,88,88,7,71,88,88
1225 DATA 8,66,88,88,8,70,88,88,7,65,8
8,88,6,65,88,88,5,111,88,88,6,116,88,8
8,6,105,88,88,5,65,88,88,4,70,88,88
1227 DATA 3,65,88,88,2,113,88,88,3,71,
88,88,4,87,88,88,5,66,88,88,5,117,88,8
8,5,118,88,88,5,87,88,88,6,71,88,88
1228 DATA 7,87,88,88,8,66,88,88,9,71,8
8,88,10,116,88,88,9,70,88,88,8,86,88,8
8,7,65,88,88,6,65,88,88,6,87,88,88
1229 DATA 7,15,104,104,7,15,104,104,7,
15,104,104,7,15,104,104,7,15,104,104,7
,15,104,104
1230 DATA 9,143,152,152,9,143,152,152,
9,143,152,152,9,143,152,152,9,143,152,
152
1231 DATA 9,143,152,152,9,143,152,152,
9,143,152,152,9,143,152,152,9,143,152,
152
1232 DATA 9,143,152,152,9,143,152,152,
9,143,152,152,9,143,152,152,9,143,152,
152
1233 DATA 9,143,152,152,9,143,152,152,
9,143,152,152,9,143,152,152,9,143,152,
152
1234 DATA 9,143,152,152,9,143,152,152,
9,143,152,152,9,143,152,152,9,143,152,
152
1235 DATA 9,143,152,152,9,143,152,152,
9,143,152,152,9,143,152,152,9,143,152,
152
1236 DATA 8,143,152,152,8,143,152,152,
8,143,152,152,8,143,152,152,8,143,152,
152
1237 DATA 8,143,152,152,8,143,152,152,
8,143,152,152,8,143,152,152,8,143,152,
152
1238 DATA 8,143,152,152,8,143,152,152,
8,143,152,152,8,143,152,152,8,143,152,
152
1239 DATA 8,143,152,152,8,143,152,152,
8,143,152,152,8,143,152,152,8,143,152,
152
1240 DATA 0,124,1,123,2,127,3,124,4,12
7,5,119,4,126,3,122,3,127,4,123,5,121,
4,122,3,126,2,125,2,127,3,120,2,126
1241 DATA 1,125,1,127,1,122,0,126,0,11
9,0,119,0,127,1,123,2,124,3,119,2,125,
1,126,1,124,1,125,0,126,0,120,0,123
1242 DATA 1,127,2,123,3,127,3,125,3,12
3,4,123,5,127,6,119,5,126,4,125,3,122,
2,126,1,126,1,127,1,95,1,95,1,121,1,95
1243 DATA 1,126,0,126,0,124,1,120,0,12
5,0,95,0,95,0,123,1,127,2,124,2,126,2,
127,3,127,4,119,3,125,2,122,2,127
1244 DATA 3,124,3,125,2,126,1,122,0,12
5
1245 DATA 12,1,137,13,1,136,24,2,82,29
,3,138,30,3,139,47,3,148,48,3,149,100,
0,82,101,1,82,102,2,82,103,3,82
1246 DATA 104,4,82,105,5,82,60,1,137,6
1,1,138,200,3,237
1249 RESTORE 1260:SD=1
1250 FOR I=1578 TO 1637:READ A:POKE I,
A:NEXT I:F=USR(1578)
1260 DATA 104,169,0,133,203,141,4,212,
160,59,162,6,169,7,76,92
1270 DATA 228,198,203,165,203,141,4,21
2,16,31,169,7,133,203
1280 DATA 141,4,212,238,4,6,173,4,6,20
1,234,208,2,169,0,162
1290 DATA 0,157,4,6,232,232,232,224,39
,208,246,76,98,228
1999 Y=45:X=88:EP=0
2000 S=STICK(0):CD=PEEK(53252):UN=UN+1
2010 IF S=7 THEN X=X+SP:X1=X1+SP:X2=X2
+SP:IMAGE=1:GOSUB 4000:IMAGE=15:GOSUB
4100:IMAGE=29:GOSUB 4200
2030 IF S=14 THEN Y=Y-SP:GOSUB 4000
2040 IF S=13 THEN Y=Y+SP:GOSUB 4000
2060 IF S=5 THEN Y=Y+SP:X=X+SP:X1=X1+S
P:X2=X2+SP:IMAGE=1:GOSUB 4000:IMAGE=15
:GOSUB 4100:IMAGE=29:GOSUB 4200
2065 IF Y<15 THEN Y=Y+SP:GOSUB 4000
2070 IF S=6 THEN Y=Y-SP:X=X+SP:X1=X1+S
P:X2=X2+SP:IMAGE=1:GOSUB 4000:IMAGE=15
:GOSUB 4100:IMAGE=29:GOSUB 4200
2090 POKE 53248,X:POKE 53249,X1:POKE 5
3250,X2
2091 IF Y>80 AND CD=2 OR Y>80 AND CD=4
 THEN GOTO 7000
2095 IF CD<>0 THEN GOSUB 5000
2096 POKE 53278,0
2999 GOTO 2000
3000 IF D=1 THEN FOR Z=0 TO 400:NEXT Z
```

```
:POKE 53278,0
3010 RESTORE 3030:FOR L=1 TO 62:READ A
3020 PLAYER$(L,L)=CHR$(A):NEXT L
3030 DATA 0,0,0,0,0,0,0,0,7,230,24,0,0
,0,0,0,0,0,0,0,24,52,248,248,24,0,0,0,
0,0,0,0,0,0
3040 DATA 24,60,127,199,126,60,16,12,0
,0,0,0,0,0,24,60,103,217,60,120,244,0,
0,0,0,0,0,0
3050 A=ADR(PM$)
3060 PB=INT(A/1024)*1024
3070 IF PB<A THEN PB=PB+1024
3080 S=PB-A
3090 POKE 54279,PB/256
3100 P0=S+512:P1=S+640:P2=S+768:P3=S+8
96
3110 FOR Z=0 TO 3:POKE 53256+Z,0:NEXT
Z
3130 POKE 704,55:POKE 705,15:POKE 706,
30:POKE 707,30
3140 POKE 559,46:POKE 53277,3:POKE 623
,33
3150 X=88:X1=88:X2=80:X3=100:POKE 5324
8,X:POKE 53249,X1:POKE 53250,X2
3160 Y=45:IMAGE=1
3170 PM$(P0+Y,P0+Y+19)=PLAYER$(IMAGE,I
MAGE+19)
3180 Y=45:IMAGE=15
3190 PM$(P1+Y,P1+Y+19)=PLAYER$(IMAGE,I
MAGE+19)
3200 Y=45:IMAGE=29
3210 PM$(P2+Y,P2+Y+19)=PLAYER$(IMAGE,I
MAGE+19)
3230 RETURN
4000 IMAGE=1:PM$(P0+Y,P0+Y+19)=PLAYER$
(IMAGE,IMAGE+19):IMAGE=15
4100 PM$(P1+Y,P1+Y+19)=PLAYER$(IMAGE,I
MAGE+19):IMAGE=29
4200 PM$(P2+Y,P2+Y+19)=PLAYER$(IMAGE,I
MAGE+19):RETURN
5000 IF SP>3 THEN 5015
5010 IF CD=8 THEN EP=EP+1:GOSUB 5200:R
ETURN
5015 D=1:FOR Z=0 TO 7:X2=X2+1:SOUND 0,
X,4,10
5016 PM$(P2+Y,P2+Y+19)=PLAYER$(IMAGE,I
MAGE+19):POKE 53250,X2:NEXT Z:FOR Z=0
TO 15:Y=Y+4:SOUND 0,Y,10,10
5017 GOSUB 4000:NEXT Z:PM$(1)=CHR$(0):
PM$(2048)=CHR$(0):PM$(2)=PM$:SOUND 0,0
,0,0
5018 CLEAR$(1)=CHR$(0):CLEAR$(128)=CHR
$(0):CLEAR$(2)=CLEAR$
5019 LI=LI-1:IF LI=0 THEN GOSUB 9000
5020 GOTO 1040
5200 IF EP=4 THEN SP=4:POKE 711,238
5201 IF H=1 THEN SP=3.5
5205 FOR Z=60 TO 50 STEP -1:SOUND 0,Z,
10,10:NEXT Z
5206 FOR Z=150 TO 160:SOUND 0,Z,10,10:
NEXT Z:SOUND 0,0,0,0
5210 RETURN
7000 GRAPHICS 16:FOR Z=0 TO 2:POKE 532
48+Z,20:NEXT Z:POKE 710,145:POKE 752,1
7020 POSITION 14,2:? "THE FLIGHT OF":P
OSITION 16,3:? "THE SWAN"
7030 POSITION 13,8:? "CONGRATULATIONS"
:POSITION 15,11:? "SPLASHDOWN":POSITIO
N 15,13:? "SUCCESSFULL"
7040 POSITION 16,17:? "game over"
7045 POSITION 12,22:? "UNITS=";UN
7050 POSITION 25,23:? "PRESS RESET"
7200 RESTORE 7500:POKE 709,15
7210 FOR Z=0 TO 16:READ N
7220 FOR T=15 TO 0 STEP -1
7225 SOUND 0,N,10,T:POKE 710,N
7226 NEXT T
7230 NEXT Z
7240 FOR T=15 TO 0 STEP -1
7250 SOUND 0,60,10,T:SOUND 1,121,10,T:
SOUND 2,91,10,T:SOUND 0,81,10,T:POKE 7
10,T
7260 NEXT T
7270 GOTO 7270
7500 DATA 121,91,72,60,55,60,55,60,121
,108,121
7510 DATA 108,91,60,121,243,60
8000 GRAPHICS 17
8010 POKE 708,15:POKE 709,200:POKE 710
,60:POKE 711,220:POKE 712,135
8020 POSITION 4,2:? #6;"THE FLIGHT OF"
:POSITION 6,3:? #6;"THE SWAN"
8030 POSITION 9,8:? #6;"by":POSITION 0
,10:? #6;"CHRISTOPHER JEPHCOTT"
8065 POSITION 3,13:? #6;"level 1=easy"
8066 POSITION 3,14:? #6;"level 2=hard"
8070 IF PEEK(764)=30 THEN SP=1.8:H=1:R
ETURN
8080 IF PEEK(764)=31 THEN SP=3:RETURN
8099 GOTO 8070
9000 FOR Z=0 TO 2:POKE 53248+Z,0:NEXT
Z
9010 GRAPHICS 17:POSITION 5,5:? #6;"ga
me over":POSITION 5,8:? #6;"LIVES=0":P
OSITION 5,11:? #6;"UNITS=";UN
9015 POSITION 5,19:? #6;"<press reset>
"
9020 GOTO 9020
30000 RUN
```

□

ADVENTURE

5. SANDS OF EGYPT



by Garry Francis, Australia

Sands of Egypt was reviewed by Alexander Kells in Issue 10, so I won't say too much about it here. I'll assume that you've read the review or you're already familiar with the game.

However, I can't help commenting on the impressive graphics. Sands of Egypt has a very attractive split screen display on a narrow playfield. The top half shows a colourful, high resolution picture in ANTIC mode 14, while the bottom is devoted to text. Player-missile graphics fill the gaps at each side of the display (in the form of Egyptian hieroglyphics) and also provides the compass that shows the possible exits. As though all this isn't enough, most of the screens are animated! Clouds float across the sky, the desert scrolls when you move about, the camel blinks and chews its cud, the water flows through the canal and the whole room shakes when you return the sceptre. The secret chamber is particularly impressive and you'll probably have a good laugh when you ride the camel. And the most amazing thing of all is that it runs in only 16k!

General Hints: The aim of the game is very clearly spelled out in the instructions, so make sure you read them before you begin. I don't think Sands of Egypt was meant to be easy, for you begin the game empty-handed in the middle of a maze! You can find yourself wandering around hopelessly lost for ages before you even find anything. This really puts beginners off (although beginners shouldn't be wandering the Sands of Egypt in the first place), so here are a few general hints.

When you begin the game, keep heading north until you reach the top of a cliff, head west until you find an object, then head north. From this point, you're on your own, but at least you've got an object to help you find your way around. Don't waste too much time drawing a map at this stage as you begin to get thirsty after 30 moves. After 45 moves, you begin to get very thirsty. After 60 moves, you start dying of thirst and after 75 moves, you're dead. The moral here should be obvious. Find water!

Once you've quenched your thirst (and it's not as easy as it sounds), you may like to collect all the objects you can lay your hands on, then return to the desert areas and map them out. Once everything is mapped, you'll feel more secure when moving around and you can concentrate on solving the puzzles. The puzzles themselves are all fairly logical, but finding the right words to use is sometimes a bit trying. The only other hint I'll give at this point is to make sure you examine every object and say HELP in every location.

If you type SCORE at any point during the game, you can see how many moves you've taken. When you eventually finish the game, you'll be told how many moves you took to complete it. The author claims to have done it in 101 moves, but I reckon he's having us on! My best is 111 moves and I can't see anywhere that it can be improved. If anyone out there can beat my score, I'd like to see your solution.

Incidentally, there are a number of one letter commands apart from N, S, E, W, U and D which you can use to save typing. These are H for Help, I for Inventory, L for Look, Q for Quit, P for Put (or droP) and T for Take (or get).

The Curse of Ra: Unfortunately, Sands of Egypt is not without its flaws. There is one insidious bug in the program which had me stumped for months. It doesn't surface until after you've found your way into the secret chamber very late in the game. If you've made it that far and you couldn't get the ladder back through the crack, then lucky you! You've found the bug! (Perhaps this is the Curse of Ra?)

When David Will Henderson encountered it, he wrote to the CONTACT column in Issue 8 for help. I responded to David's plea in the Readers' Letters of Issue 10. At the time, I said that the bug occurred randomly and for no apparent reason. This is not true. After further testing, I now believe I know why the bug occurs and how to overcome it. So if you are interested, read on...

In order to make Adventures a little more difficult (and realistic), there is usually a limit on the number of items you can carry about. Sands of Egypt is no exception and limits you to six items. The Adventure programmer normally handles this by allocating a specific location in memory to keep track of the number of items in the player's possession. If the program is written in BASIC, then he may use a variable instead. In any case, for the sake of convenience, let's refer to this location (or variable) as COUNT.

When the program begins, COUNT is initialised to the number of items in the player's possession. In Sands of Egypt, you begin empty-handed, so COUNT is zero. Every time you try to pick up an item, the GET routine tests COUNT. If COUNT is at its maximum, then you're told that you're carrying too much and you can't pick the object up. On the other hand, if COUNT is less than its maximum, then the object is added to your inventory and COUNT is incremented. When you want to drop an object, the DROP routine puts the object in the current room and COUNT is decremented.

So far, so good.

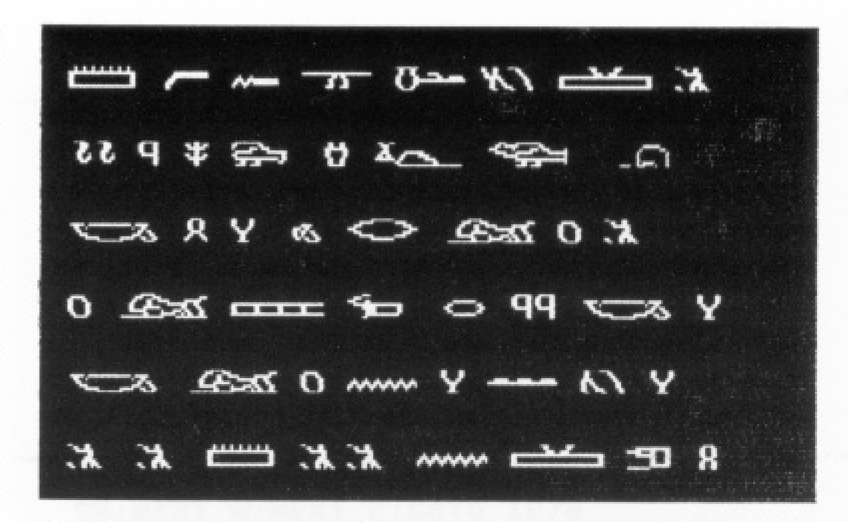
Unfortunately, Sands of Egypt has one special case for the DROP routine which (I suspect) hasn't been handled properly. If you have satisfied all the necessary conditions when you try to DROP SCEPTRE in the outer chamber,

the program asks "Where?". If you respond correctly, the sceptre is dropped, but because this is a special case and not part of the general DROP routine, COUNT is not decremented! *THIS IS THE BUG!* COUNT should be decremented to reflect the new number of items. This means that you may now have (say) two items in your possession, but COUNT still thinks you've got three! Keep this in mind for a moment. Apart from keeping a tally of your inventory, COUNT is also useful for testing the validity of other actions. For example, you are not allowed to climb the palm tree carrying more than one item. If you say CLIMB TREE, the CLIMB routine will first ensure that COUNT is less than or equal to one. If COUNT is greater than one, you will be told that your load is too heavy to climb the tree. Similarly, you can't enter the crack to and from the secret chamber while carrying more than two items. Therefore, if you are carrying the torch and ladder (as you must) when you try to leave the secret chamber, but COUNT thinks you've got three items (due to the bug), then you cannot possibly take the ladder out of the secret chamber!

Fortunately, there is a way of defeating the bug. Apart from dropping individual items, Sands of Egypt also allows you to drop everything by saying DROP ALL. If you do this after putting the sceptre in its proper place, then everything is dropped and COUNT is set to zero. You can now GET and DROP items in the normal manner and COUNT will again reflect the correct number of items in your inventory. It is now possible to take the ladder from the secret chamber and ultimately complete the game.

Coded Hints: If any of our more observant readers thought the hints for Original Adventure and Zork I were in a funny order, it was because Les got them all mixed up when pasting up the magazine. In order to avoid that happening in future, the hints are now numbered, but otherwise follow the same format as usual.

Incidentally, the word next to number 77 in the Zork I hints somehow went astray. It should have been a period (or full stop or dot or whatever you want to call it). The poor thing was so small, that it probably fell off the page! *(Actually it was painted out on the negative by the platemaker who thought it was merely a nasty blemish! Ed.)*



1) Can't get past the snake?
20 11 6 14 48 37 57 14

2) Can't get the snake oil?
31 37 25

3) Can't find a container?
18 1 33 20 14

4) Can't find any water?
18 15 21 43 21 47 21 1 33 20 32 52 20 29

5) Can't get to the pyramid?
7 20 41

6) Camel won't co-operate?
7 20 34 53

7) Can't get the palm fronds?
7 20 54

8) Camel still won't co-operate?
16 30 45 5 36

9) Can't get the sceptre?
4 26 39 30 51 20 14

10) Haven't found the underground canal?
4 26 2 20 35

11) Still haven't found the underground canal?
45 40 8 24

12) Missing a light source?
4 26 56 52 20 19

13) Can't light the torch?
4 26 13 20 17 52 20 29

14) Still can't light the torch?
28

15) Can't move the boat upstream?
45 12

16) Boat floats away when you enter the archway?
38 5 49

17) Missing a rope?
55 10 22 13 20 17 52 20 29 36

18) Can't find the secret chamber?
44 20 23

19) Can't get the ladder out of the secret chamber?
46 9 8 7 50

20) Can't get out of the underground canal?
16 30 55 20 42 36

21) Think you've done everything, but the game's not over?
18 27 37 41 3

1	EAST	11	ONLY	21	,	31	FIND	41	CAMEL	51	FOUND
2	BY	12	SHOVEL	22	HAPPENED	32	TOP	42	LADDER	52	OF
3	RIDE	13	AT	23	HIEROGLYPHICS	33	FROM	43	WEST	53	TREE
4	SAY	14	SNAKE	24	SCEPTRE	34	PALM	44	HEED	54	PYRAMID
5	IT	15	DOWN	25	CONTAINER	35	POOL	45	EXAMINE	55	REMEMBER
6	GOOD	16	DID	26	HELP	36	?	46	DROP	56	NORTH
7	TRY	17	BASE	27	FOR	37	A	47	SOUTH	57	DEAD
8	AND	18	GO	28	SUNLIGHT	38	TIE	48	IS		
9	ALL	19	START	29	CLIFF	39	WHERE	49	UP		
10	WHAT	20	THE	30	YOU	40	COVER	50	AGAIN		

Bomb Escape

by Ron Smith

The object is to escape from a building to a safe black square before a time bomb explodes.

The Building - an outline of a building is given in blue with some of the doors only one pixel wide. Extra rooms, corridors and, sometimes, doors are seen at and above levels three and five. The blue walls must not be touched at any level.

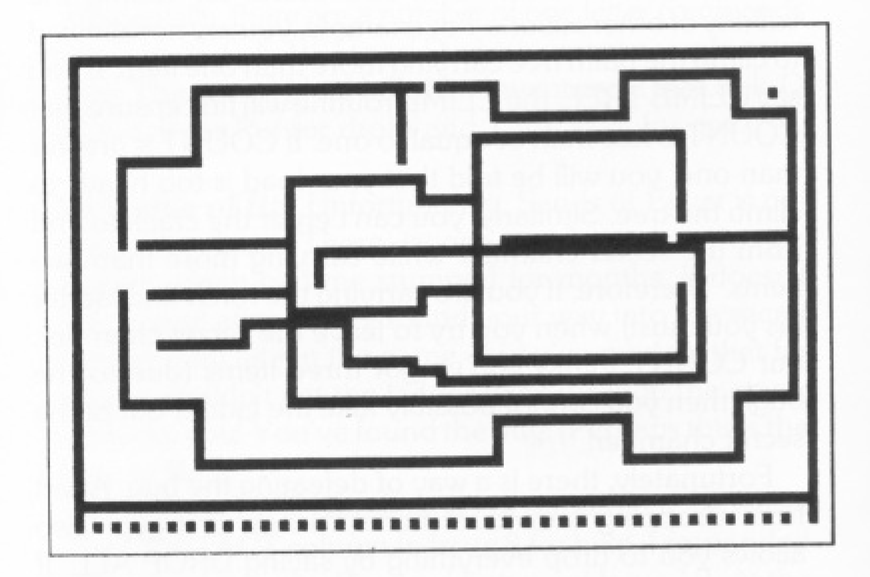
The Timer - is ticking away at the bottom of the screen. It is reset if the black square is reached or if the bomb explodes. If a life is lost then the timer continues from the same position. It is not reset to zero. On each new level the timer's fuse is shortened and is not lengthened again during the game.

The Player - leaves a red trail which must not be touched. The joystick directly controls the speed of the timer - as long as the player is moving, the timer is slowed down. It is a necessity to keep moving at level 5 and above.

Lives - the game starts with three lives and a life is lost if a red or blue square is touched or if the bomb explodes. If a life is lost then one level is also lost and the game continues at this easier level but with less time available.

General - an average score of 55,000 is easily possible reaching level 6, however progression beyond this point is difficult and requires expert joystick control.

The timer is controlled by the variables COUNT and TIME. COUNT is increased on line 600 and each time it passes the value of TIME, the program plots another pixel on the timer. TIME is set to 1000 at the start of the game and reduces on line 40 by steps of 100 to a minimum of 400. If either of these variables are altered, then the timer would be lengthened or shortened. DOOR plots two doors at random and is set on line 300.



```
1 REM ******************************
2 REM **       BOMB  ESCAPE       **
3 REM **            BY            **
4 REM **     R.F.SMITH. 1984      **
5 REM **  ----------------------  **
6 REM ** PAGE 6 MAGAZINE - ENGLAND **
7 REM ******************************
10 GOTO 1000
20 COUNT=0:X1=0:Y1=47:TIME=1000:LEVEL=
1:LIVES=3
30 GOTO 50
40 COUNT=0:X1=0:TIME=TIME-100:IF TIME<
400 THEN TIME=400
50 GRAPHICS 21:POKE 712,30:POKE 708,13
0:POKE 709,0:POKE 710,40
60 RESTORE
70 X3=INT(RND(0)*8+24):Y3=INT(RND(0)*1
0+15):X2=INT(RND(0)*7+72):Y2=INT(RND(0
)*5+1)
100 COLOR 1:PLOT 0,47:DRAWTO 0,0:DRAWT
O 79,0:DRAWTO 79,47:PLOT 0,45:DRAWTO 7
9,45
110 PLOT 5,19:FOR E=1 TO 21:READ A,B:D
RAWTO A,B:NEXT E
120 DATA 5,11,13,11,13,4,45,4,45,7,59,
7,59,3,71,3,71,7,77,7,77,35,71,35,71,4
1,59,41,59,37,45,37,45,41,13,41,13,35
130 DATA 5,35,5,24
140 PLOT 65,24:FOR E=1 TO 15:READ A,B:
DRAWTO A,B:NEXT E:GOTO 400
150 DATA 65,31,43,31,43,21,43,24,37,24
,37,26,23,26,23,13,37,13,37,15,43,15,4
3,19,43,9,65,9,65,19
160 COLOR 1:FOR E=1 TO 7:READ A,B,C,D:
PLOT A,B:DRAWTO C,D:NEXT E:RETURN
170 DATA 7,19,23,19,35,4,35,11,46,19,6
3,19,66,19,76,19,8,24,23,24,23,28,23,3
4,23,35,59,35
180 COLOR 1:FOR E=1 TO 7:READ A,B,C,D:
PLOT A,B:DRAWTO C,D:NEXT E
190 DATA 15,35,23,35,43,17,51,17,53,19
,53,13,65,19,66,19,65,11,75,11,37,26,3
7,33,43,11,43,7
200 FOR E=1 TO 9:READ A,B:PLOT A,B:NEX
T E:RETURN
210 DATA 77,19,62,4,62,5,68,4,68,5,65,
7,65,8,69,9,69,10
300 DOOR=RND(0):IF DOOR>0.5 THEN COLOR
 0:PLOT 38,4:PLOT 65,18:RETURN
350 COLOR 3:PLOT 0,47:DRAWTO X1,Y1:RET
URN
400 IF LEVEL>2 THEN GOSUB 160:GOSUB 30
0
410 IF LEVEL>4 THEN GOSUB 180:GOSUB 30
0
420 IF LIVES<3 THEN GOSUB 350
430 COLOR 2:PLOT X2,Y2:COLOR 3:PLOT X3
,Y3
```

```
440 POKE 77,0:S=STICK(0)
450 IF S=15 THEN GOTO 600
460 X3=X3+(S=5 OR S=6 OR S=7)-(S=9 OR
S=10 OR S=11)
470 Y3=Y3+(S=5 OR S=9 OR S=13)-(S=6 OR
 S=10 OR S=14)
480 X=X3:Y=Y3
490 COLOR 3:LOCATE X,Y,Z
500 IF Z=3 OR Z=1 THEN GOTO 700
510 IF Z=2 THEN GOTO 900
520 PLOT X,Y
600 COUNT=COUNT+(LEVEL*5)+50:IF COUNT>
TIME THEN GOSUB 650
610 SOUND 0,160,10,6:SOUND 1,200,10,6:
SOUND 0,0,0,0:SOUND 1,0,0,0:GOTO 440
650 COLOR 3:PLOT X1,Y1:SOUND 0,100,10,
14:X1=X1+2
660 IF X1>79 THEN GOSUB 800
670 COUNT=0:SOUND 0,0,0,0:RETURN
700 FOR P=255 TO 20 STEP -2:POKE 710,1
5:POKE 708,P:SOUND 0,P,0,10:POKE 710,4
0:NEXT P:SOUND 0,0,0,0:GOSUB 840
710 SOUND 0,0,0,0:SOUND 1,0,0,0:GOTO 5
0
800 FOR P=30 TO 200:POKE 710,15:POKE 7
12,P:SOUND 0,P,0,10:POKE 710,32:NEXT P
:SOUND 0,0,0,0:GOSUB 840
830 COUNT=0:X1=0:GOTO 50
840 LIVES=LIVES-1:IF LIVES=0 THEN GOTO
 1100
850 LEVEL=LEVEL-1:IF LEVEL=0 THEN LEVE
L=1
860 RETURN
900 GRAPHICS 18:POKE 712,31:LEVEL=LEVE
L+1:SC=SC+((LEVEL*5)*500-(X1*5)*2)
910 POSITION 5,4:? #6;"LEVEL ";LEVEL:P
OSITION 5,6:? #6;"SCORE ";SC
920 FOR DE=1 TO 5:FOR P=100 TO 60 STEP
 -2:SOUND 0,P,10,10:SOUND 1,P+5,10,10:
NEXT P:NEXT DE
930 SOUND 0,0,0,0:SOUND 1,0,0,0:GOTO 4
0
1000 GRAPHICS 18:POKE 712,31:POKE 708,
48:POKE 709,15
1010 POSITION 6,2:? #6;"B":GOSUB 1090:
POSITION 12,4:? #6;"P":GOSUB 1090:POSI
TION 6,4:? #6;"S"
1020 GOSUB 1090:POSITION 12,2:? #6;"B"
:GOSUB 1090:POSITION 4,4:? #6;"E":GOSU
B 1090:POSITION 14,4:? #6;"E"
1030 GOSUB 1090:POSITION 10,2:? #6;"M"
:GOSUB 1090:POSITION 8,4:? #6;"C":GOSU
B 1090:POSITION 8,2:? #6;"O"
1040 GOSUB 1090:POSITION 10,4:? #6;"A"
:GOSUB 1090
1050 DIM A$(15):A$="BY R.F.SMITH.":FOR
 X=1 TO 13:POSITION X+2,7:? #6;A$(X,X)
:GOSUB 1090:NEXT X
1055 FOR W=1 TO 500:NEXT W:POSITION 3,
7:? #6;"              "
1060 FOR W=1 TO 300:NEXT W:POSITION 4,
7:? #6;"press start"
1070 FOR C=191 TO 15 STEP -16:POKE 709
,C+16:IF PEEK(53279)=6 THEN SOUND 0,0,
0,0:GOTO 20
1080 SOUND 0,C/12+10,10,10:FOR W=1 TO
50:NEXT W:NEXT C:GOTO 1070
1090 SOUND 0,140,2,10:FOR W=1 TO 50:NE
XT W:SOUND 0,0,0,0:FOR W=1 TO 50:NEXT
W:RETURN
1100 GRAPHICS 18:POKE 712,31:POKE 709,
15:POKE 708,34:POKE 710,34:POKE 711,34
:SOUND 0,0,0,0:SOUND 1,0,0,0
1110 IF SC>HI THEN HI=SC
1120 POSITION 8,0:? #6;"BOMB":POSITION
 7,1:? #6;"ESCAPE":POSITION 3,7:? #6;"
SCORE    ";SC
1130 POSITION 3,8:? #6;"HISCORE   ";HI
1140 FOR W=1 TO 500:NEXT W:POSITION 4,
4:? #6;"press start"
1150 FOR C=191 TO 15 STEP -16:POKE 711
,C+8:POKE 710,C-6:POKE 709,C+15:POKE 7
08,C-8
1160 IF PEEK(53279)=6 THEN 1180
1170 SOUND 0,C/2+10,10,10:SOUND 1,C/2,
10,10:FOR W=1 TO 50:NEXT W:NEXT C:GOTO
 1150
1180 SOUND 0,0,0,0:SOUND 1,0,0,0:SC=0:
GOTO 20
```

DO YOU RUN A USER GROUP?

Atari will in future be producing a quarterly newsletter for User Groups keeping them up to date with the latest developments. To make sure your group gets this newsletter write NOW to Jon Dean at ATARI CORP. (UK) Limited, Atari House, Railway Terrace, Slough, Berks, SL2 5BZ and let him have details of your group.

Printer Utility

L: a 1020 handler device

by David and Mary Lynch

We bought an ATARI 1020 printer earlier this year. Since then the price has fallen considerably! We have used the printer a great deal, mainly for programming but we have written one or two graphics programs ourselves.

A printer makes writing large programs feasible on a home computer, no more scribbling down odd lines of code on scraps of paper. You can debug your programs as they ought to be debugged. Get a listing, retire to an armchair, read and think.

In general, we are satisfied with the printer. In general that is. It gives clear, readable text, easier on the eyes than that produced on many mainframes, flexible graphics and is fast enough for the applications we wanted. A business user would probably find speed a drawback though. There is however one problem with the printer - the documentation is terrible. It is so bad that even a casual perusal reveals its inadequacies. We have therefore spent some time trying to find out how far you can stretch the printer, with some success, and this article records some of our findings.

Since, as far as we know, there are no programs on sale which use the 1020 printer, one of the first ways in which you can use your printer is to list your own programs.

Early on it struck us how inappropriate is the size of text for program listings, it is too large. Our bookshelves began to look like Roman libraries with scrolls of code many feet long. To get to the subroutine you wanted in a long program meant unravelling many feet of paper. How much nicer if the text could be printed in the smallest character size available, 80 characters per line. Ideal for assembler listings and a great improvement for BASIC ones.

We set about trying to do this. Our first attempt, successful but cumbersome, was to write the listing file to disc and then use a program to read in the file and write it to the printer, preceded by ESC-CNTL-S, the magic formula for getting small letters on the printer. This involved reading and writing large files - slow. We tried various other tacks, including ESC-CNTL-S as a comment in the program and using a vertical blank interrupt to write ESC-CNTL-S, until we finally came up with a workable solution.

The problem is that when confronted with a command LIST "P:" to print a listing the Operating System first closes then re-opens the printer, thus setting default values and defeating any chicanery you may have been up to. The solution was to define a new input handler "L:" whose only function is to print in small letters. We steal most of the code provided by the Operating System for the printer, "P:", but substitute our own code for the OPEN routine. When we set up "L:", we open the printer then print ESC-CNTL-S. (Note that because "P:" and "L:" share code and buffers, it is dangerous to have them OPEN at the same time - not that I can see any reason for doing so.)

There are a couple of additional frills. How about being able to forget about setting up "L:" each time we turn on the computer? We can do this by making the program into a "D:AUTORUN.SYS" file which is executed automatically by DOS on power up. (This of course works only if you have a disc drive). In addition, we do not want our facility ruined by pressing SYSTEM RESET and we can stop this by placing the address of the set up routine in RUNAD ($2E0,$2E1), which is executed when SYSTEM RESET is pressed.

For those with assembler editors, a listing of the code is included. Save the object code as "D:AUTORUN.SYS". The print out is of the assembler listing rather than the source so that the BASIC program may be more understandable.

The program occupies the end of page 6 - $6A0 to $6FF. If you don't mind SYSTEM RESET destroying "L:", $6DC to $6FF is all that needs preserving.

The BASIC program does the same thing. The first two numbers in line 1070 are a header for the file. The following four numbers are the addresses of the start and end of the routine in decimal. There follows the machine code down to line 1200. Line 1210 inserts the address of the routine in place so that SYSTEM RESET will restore "L:".

Type in the program as listed. SAVE it as "L:BAS" and then RUN the program with a disk in the drive containing DOS. Turn off the computer and turn it on again. If all has gone well you should now have set up "L:". Try LOAD "L.BAS" then LIST "L:" and you should get a listing of the program in letters 80 characters to a line.

LPRINT does not appear to work very well with the 1020. While you can print normal size (40 characters per line), the special facilities, such as changing print size, do not work. I suspect that this is because when BASIC meets an LPRINT statement, it closes and opens the printer, so destroying control commands that you have sent it previously.

The solution is to amend programs containing LPRINT as follows:

a. Precede the first LPRINT statement executed in the program by CLOSE #7: OPEN #7,8,0,"P:"

b. Replace all LPRINTs by PRINT #7;

I have amended the TINYTEXT program to enable it to use the 1020 printer. In my version, lines 700, 725, 727, 830, 870, 885 and 3130 require changing in the way that I have explained. I hope that this updated version of TINYTEXT can be made available to readers of PAGE 6. *(I hope to publish a revised and updated version of TINYTEXT early next year. If any other readers have modified or improved the program I would appreciate a copy. Ed.)*

```
1010 REM SETS UP L: PRINTER HANDLER
1020 REM  by David & Mary Lynch
1030 OPEN #2,8,0,"D:AUTORUN.SYS"
1040 TRAP 1060:FOR I=1 TO 65536
1050 READ Q:PUT #2,Q:? Q:NEXT I
1060 END
1070 DATA 255,255,160,6,255,6,165
1080 DATA 12,141,182,6,165,13,141
1090 DATA 183,6,169,181,133,12,169
1100 DATA 6,133,13,56,176,3,32,184
1110 DATA 6,160,0,185,26,3,201,0,240
1120 DATA 9,200,200,200,192,34,208
1130 DATA 242,56,96,169,76,153,26
1140 DATA 3,200,169,220,153,26,3,200
1150 DATA 169,6,153,26,3,96,234,6
1160 DATA 219,238,157,238,166,238
1170 DATA 128,238,157,238,76,120,238
1180 DATA 32,159,238,169,27,32,167
1190 DATA 238,169,19,32,167,238,169
1200 DATA 155,32,167,238,160,1,96
1210 DATA 224,2,225,2,160,6
```

```
               1000 ; Sets up L: I/O handler
               1010 ; by David & Mary Lynch
0000           1020        .OPT NOEJECT
0000           1030        *=   $6A0
031A           1040 HATABS =    $31A
000C           1050 DOSINI =    $C
               1060 ; [SYSTEM RESET] trap
06A0 A50C      1070 LINIT  LDA  DOSINI
06A2 8DB606    1080        STA  SYSRES+1
06A5 A50D      1090        LDA  DOSINI+1
06A7 8DB706    1100        STA  SYSRES+2
06AA A9B5      1110        LDA  #SYSRES&255
06AC 850C      1120        STA  DOSINI
06AE A906      1130        LDA  #SYSRES/256
06B0 850D      1140        STA  DOSINI+1"
06B2 38        1150        SEC
06B3 B003      1160        BCS  LSETUP
06B5 20B806    1170 SYSRES JSR  DUMMY
               1180 DUMMY
               1190 ; look for free handler entry
06B8 A000      1200 LSETUP LDY  #0
06BA B91A03    1210 LOOP   LDA  HATABS,Y
06BD C900      1220        CMP  #0         free entry?
06BF F009      1230        BEQ  FREE
06C1 C8        1240        INY
06C2 C8        1250        INY
06C3 C8        1260        INY
06C4 C022      1270        CPY  #34        end of HATABS?
06C6 D0F2      1280        BNE  LOOP
06C8 38        1290        SEC             error, no free entries
06C9 60        1300        RTS
               1310 ;
06CA A94C      1320 FREE   LDA  #'L        device name
06CC 991A03    1330        STA  HATABS,Y
06CF C8        1340        INY
06D0 A9DC      1350        LDA  #LTAB&$00FF
06D2 991A03    1360        STA  HATABS,Y  handler address
06D5 C8        1370        INY
06D6 A906      1380        LDA  #LTAB/256
06D8 991A03    1390        STA  HATABS,Y  handler address
06DB 60        1400        RTS
               1410 ;
06DC EA06      1420 LTAB   .WORD LOPEN-1  new open
06DE D8EE      1430        .WORD $EED8    old close
06E0 9DEE      1440        .WORD $EE9D    old read
06E2 A6EE      1450        .WORD $EEA6    old write
06E4 80EE      1460        .WORD $EE80    old status
06E6 9DEE      1470        .WORD $EE9D    old special
06E8 4C78EE    1480        JMP  $EE78     old intialisation
               1490 ;
06EB 209FEE    1500 LOPEN  JSR  $EE9F
06EE A91B      1510        LDA  #27        escape
06F0 20A7EE    1520        JSR  $EEA7
06F3 A913      1530        LDA  #19        cntl S
06F5 20A7EE    1540        JSR  $EEA7
06F8 A99B      1550        LDA  #155       eol
06FA 20A7EE    1560        JSR  $EEA7
06FD A001      1570        LDY  #1
06FF 60        1580        RTS
0700           1590        *=   $2E0
02E0 A006      1600        .WORD LINIT
02E2           1610        .END
```

□

CAMELOT

by Allan Knopp

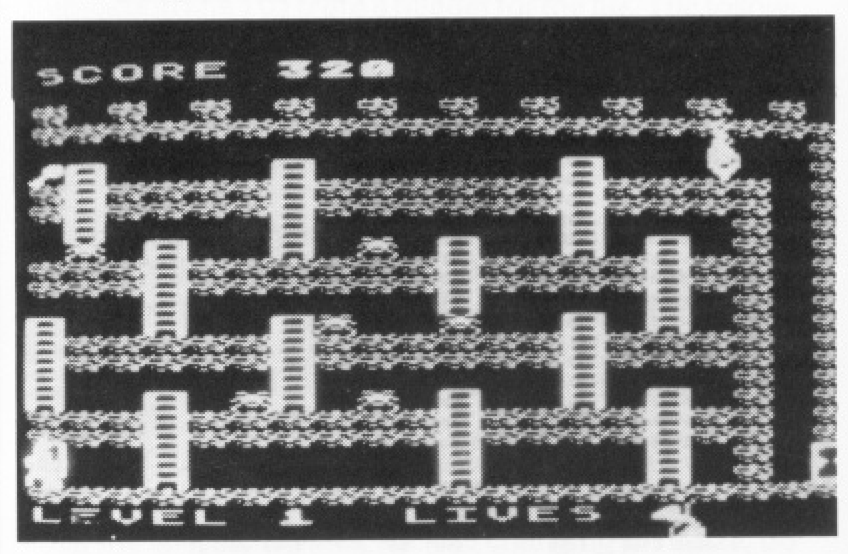
Go forth, brave knight, to rescue yonder damsel held captive high in the towers of a mighty castle. The way is not easy but persevere and battle through and the maiden's favours shall be yours.

Camelot is a five screen game requiring 32k in which you control the knight as he runs around the castle attempting to reach the maiden. He can climb up and down ladders and jump from walls but needs to be precise in his movement. On each level he must find and collect a key in order to open the door at the bottom right and so progress to the next screen. Obstacles include falling firebombs, eerie and barely visible bats, water and huge yellow spider monsters. Contact with any of these will prove fatal.

Each screen is straightforward though progressively more difficult but on the final screen you must first collect the sword in order to cross the water. There is a time limit for each screen and the score is based on the amount of time left at the end of each completed screen.

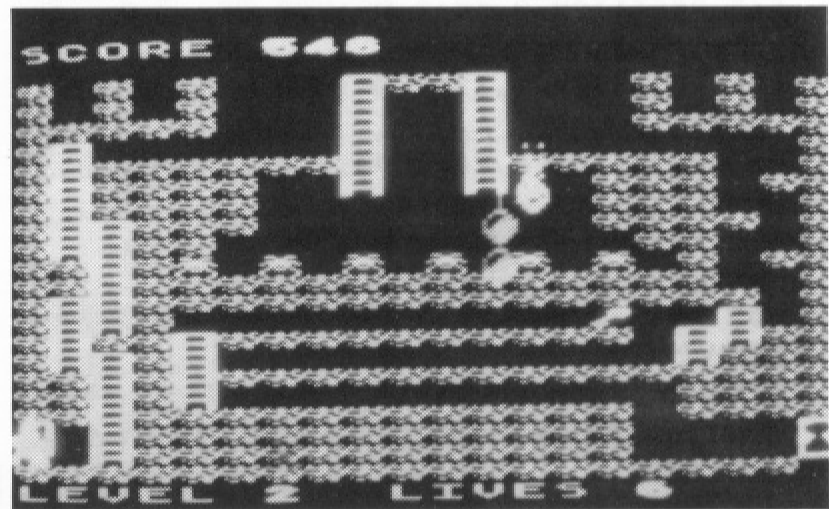
The way is difficult but it can be done. Go forth, brave knight!

```
10 REM ******************************
11 REM *   CAMELOT by ALLAN KNOPP    *
12 REM *    WITH ASSISTANCE FROM     *
13 REM *         JUSTIN KNOPP        *
14 REM * --------------------------- *
15 REM * PAGE 6 MAGAZINE - ENGLAND   *
16 REM ******************************
100 REM
105 GOTO 1405
110 DIM A(8),R$(1),F$(15):GOSUB 1505
115 RESTORE 1450
120 REM * PMMOVE ROUTINE *TOM HUDSON* ANALOG MAGAZINE
125 DIM PMMOV$(100),P0$(14),P1$(17),P2$(56),P3$(12):MOVE=ADR(PMMOV$):FOR X=1 TO 100:READ N:PMMOV$(X)=CHR$(N):NEXT X
130 REM READ SHAPE DATA
135 FOR X=1 TO 10:READ N:P0$(X)=CHR$(N):NEXT X
140 FOR X=1 TO 14:READ N:P1$(X)=CHR$(N):NEXT X
145 FOR X=1 TO 56:READ N:P2$(X)=CHR$(N):NEXT X
150 FOR X=1 TO 11:READ N:P3$(X)=CHR$(N):NEXT X
155 PMBASE=INT((PEEK(145)+3)/4)*4:POKE 54279,PMBASE
160 PMB=PMBASE*256
165 PMD=ADR(P0$):REM PM DATA ADDRESS
170 WAT=ADR(P1$)
175 BAT=ADR(P2$)
180 BOM=ADR(P3$)
185 POKE 559,46:POKE 53277,3:REM PM DMA
190 POKE 704,124:POKE 705,118:POKE 706,211:POKE 707,54:POKE 708,86:POKE 710,6:POKE 711,122
195 POKE 623,1
200 SC=1:L=4:SCO=0:POKE 53277,2
205 GOTO 1285
210 ON SC GOSUB 920,680,555,800,1045
215 POSITION 0,23:? #6;"LEVEL ";SC;"  ":POSITION 9,23:? #6;"LIVES ";L;"  ":POKE 53278,1
220 K=0
225 X=48:Y=94
230 XA=190:YA=64:XB=140:YB=40
235 XC=100:YC=60
240 S=STICK(0)
245 TIM=TIM-2:POSITION 0,0:? #6;"SCORE ";TIM;"  ":IF TIM=0 THEN L=0
```




```
250 X=X+(S=7 AND X<200)*8-(S=11 AND X>48)*8:GX=(X-48)/8:GY=(Y-16)/4:IF GY>20 THEN GY=20:IF Y<94 THEN Y=94
255 IF PEEK(53260)>0 THEN GOTO 520
260 LOCATE GX,GY+1,C:LOCATE GX,GY+2,D
265 IF C=165 THEN GOSUB 495
270 IF C=64 THEN Y=Y+(S=13 AND Y<96)*4-(S=14 AND Y>16)*4
275 IF C=247 THEN K=1:COLOR 32:PLOT GX,GY+1:FOR S=1 TO 4:SOUND 2,10,10,15:FOR W=1 TO 30:NEXT W:SOUND 2,0,0,0:NEXT S
280 REM * IN PRECEDING LINE USE C. AS ABBREVIATION FOR COLOR *
285 IF C=249 OR C=231 AND K=1 THEN SC=SC+1:SCO=SCO+TIM:L=L+2:GOSUB 1280:GOTO 210
290 IF D=32 THEN Y=Y+8
295 IF C=106 OR D=106 THEN GOSUB 1255:GOTO 540
300 IF D=192 THEN Y=Y-8
```

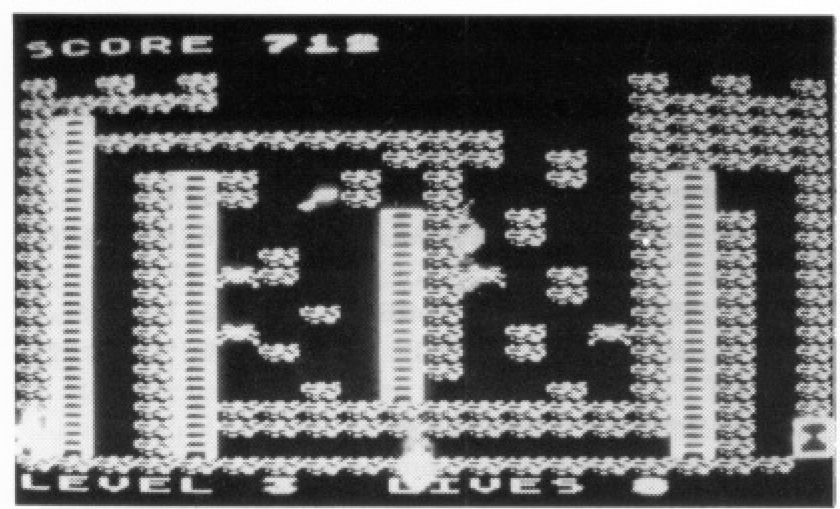
```
305 IF C=75 OR D=75 THEN GOSUB 1155
310 IF C=250 THEN GOSUB 1165:GOSUB 128
0:GOTO 1170
315 IF Y>94 THEN Y=94
320 A=USR(MOVE,0,PMB,PMD,X,Y,10)
325 IF S<>15 THEN SOUND 0,25,12,15:FOR
 W=1 TO 5:NEXT W:SOUND 0,0,0,0
330 IF PEEK(53279)=3 THEN GOTO 490
335 YI=6-INT(RND(0)*2)
340 YA=YA+YI
345 IF YA<5 THEN YA=100
350 IF YA>100 THEN YA=5:GOTO 445
355 A=USR(MOVE,1,PMB,WAT,XA,YA,14)
360 SOUND 1,40-YA/3,8,4
365 POKE 77,0
370 XJ=INT(RND(0)*10):YJ=1-INT(RND(0)*
5)
375 XB=XB+XJ:YB=YB+YJ
380 IF XB<40 THEN XB=200
385 IF XB>200 THEN XB=40
390 IF YB<0 THEN YB=120
395 A=USR(MOVE,2,PMB,BAT,XB,YB,56)
400 YK=10-INT(RND(0)*5)
405 YC=YC+YK
410 IF YC<10 THEN YC=110
415 IF YC>110 THEN YC=10:GOTO 450
420 A=USR(MOVE,3,PMB,BOM,XC,YC,11)
425 IF SC=2 AND PEEK(53770)>40 THEN GO
SUB 545
430 IF SC=2 AND PEEK(53770)<40 THEN GO
SUB 550
435 IF L<1 THEN TIM=0:GOSUB 1280:GOTO
455
440 GOTO 240
445 XA=INT(RND(0)*120)+70:GOTO 240
450 XC=INT(RND(0)*120)+70:GOTO 240
455 IF SCO+TIM>HSC THEN HSC=SCO+TIM
460 POKE 53277,0
465 POSITION 2,5:? #6;"   SCORE ";SCO+
TIM:POSITION 2,7:? #6;"HI SCORE ";HSC
470 SOUND 1,0,0,0
475 POSITION 0,22:? #6;"    press star
t "
480 IF PEEK(53279)<>6 THEN 480
485 POSITION 0,22:? #6;"
"
490 TIM=0:GOSUB 1280:GOTO 200
495 IF S=7 THEN X=X-8:IF X<48 THEN X=4
8
500 IF S=11 THEN X=X+8
505 IF S=14 THEN Y=Y+4
510 IF S=13 OR S=15 THEN Y=Y-4:IF Y<20
 THEN Y=20
515 RETURN
520 POKE 53278,1:L=L-1:X=48:Y=94:FOR S
=1 TO 40:SOUND 3,5,10,12:NEXT S:SOUND
3,0,0,0:IF K=1 THEN GOSUB 1255
525 A=USR(MOVE,0,PMB,PMD,X,Y,10)
530 YB=YB+10
535 A=USR(MOVE,2,PMB,BAT,XB,YB,56):GOT
0 215
540 FOR Z=1 TO 40:SOUND 3,Z,6,14:NEXT
Z:SOUND 3,0,0,0:L=L-1:GOTO 215
545 POSITION 6,6:? #6;"%%":POSITION 9,
2:? #6;"%%":POSITION 12,6:? #6;"%%":RE
TURN
550 POSITION 6,6:? #6;"  ":POSITION 9,
2:? #6;"  ":POSITION 12,6:? #6;"  ":RE
TURN
555 REM DRAW SCREENS
560 TIM=TIM+600
565 POSITION 0,2:? #6;"% % %
% % "
```



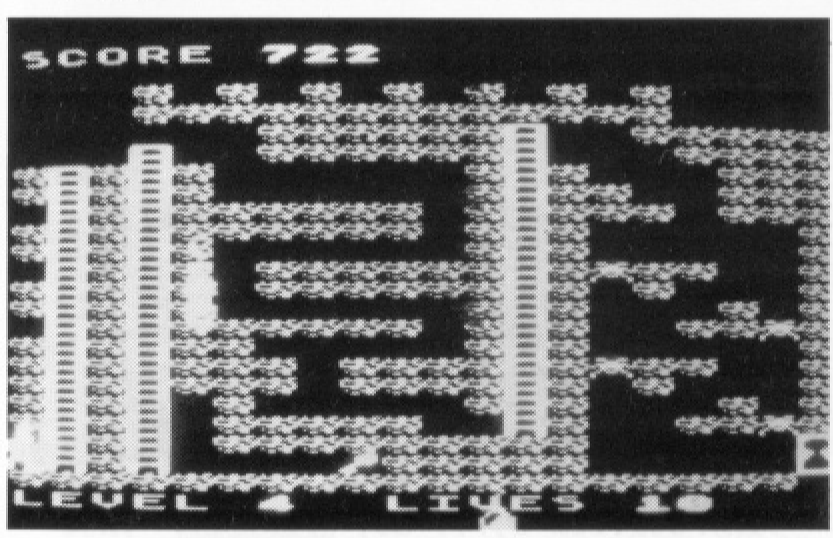

```
570 POSITION 0,3:? #6;"%%%%%
%%%%"
575 POSITION 0,4:? #6;"%@
%%%%"
580 POSITION 0,5:? #6;"%@%%%%%%%%%%%
%%%%"
585 POSITION 0,6:? #6;"%@          %%% %
%%%%"
590 POSITION 0,7:? #6;"%@ %@%  % %  %
%@  "
595 POSITION 0,8:? #6;"%@ %@% W% %
%@  "
600 POSITION 0,9:? #6;"%@ %@     @% %
%@% "
605 POSITION 0,10:? #6;"%@ %@    @% %
 %@% "
610 POSITION 0,11:? #6;"%@ %@ %  @%
 %@% "
615 POSITION 0,12:? #6;"%@ %@j%  @%j %
 %@% "
620 POSITION 0,13:? #6;"%@ %@    @%  %
 %@% "
625 POSITION 0,14:? #6;"%@ %@  % @%
 %@% "
630 POSITION 0,15:? #6;"%@ %@j   @% %
 j%@% "
635 POSITION 0,16:? #6;"%@ %@ %  @% %
 %@% "
640 POSITION 0,17:? #6;"%@ %@    @%
 %@% "
```

continued overleaf

CAMELOT continued




```
645 POSITION 0,18:? #6;"▨e ▨e  ▨ e   ▨
 ▨e▨ "
650 POSITION 0,19:? #6;"▨e ▨e▨▨▨▨▨▨▨▨▨
▨▨e▨ "
655 POSITION 0,20:? #6;" e ▨e▨▨▨▨▨▨▨▨▨
▨▨e▨ "
660 POSITION 0,21:? #6;" e ▨e
   e▨ "
665 POSITION 0,22:? #6;"▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨
▨▨▨▨▨"
670 COLOR 165:PLOT 19,2:DRAWTO 19,19:P
OSITION 19,20:? #6;"◙":POSITION 19,21:
? #6;"◙"
675 RETURN
680 FOR X=0 TO 22:COLOR 32:PLOT 0,X:DR
AWTO 19,X:NEXT X
685 TIM=TIM+600
690 POSITION 0,2:? #6;"▨ ▨ ▨   e▨▨e
▨ ▨ ▨"
695 POSITION 0,3:? #6;"▨ ▨.▨   e  e
▨ ▨ ▨"
700 POSITION 0,4:? #6;"▨▨▨▨▨   e  e
▨▨▨▨▨"
705 POSITION 0,5:? #6;"▨e      e  e
    ▨"
710 POSITION 0,6:? #6;"▨e▨▨▨▨▨▨e  e▨▨▨
▨▨  ▨"
715 POSITION 0,7:? #6;"▨e▨▨▨▨  e  e ▨
▨▨ ▨▨"
720 POSITION 0,8:? #6;"▨e▨▨▨▨       ▨
▨▨  ▨"
725 POSITION 0,9:? #6;"▨ee▨▨▨       ▨
▨▨▨ ▨"
730 POSITION 0,10:? #6;"▨ee▨▨
 ▨▨  ▨"
735 POSITION 0,11:? #6;"▨▨e▨j j j j j
j ▨ ▨▨"
740 POSITION 0,12:? #6;"▨▨e▨▨▨▨▨▨▨▨▨▨▨
▨▨▨  ▨"
745 POSITION 0,13:? #6;"▨ee▨▨▨▨▨▨▨▨▨▨▨
▨▨▨▨ ▨"
750 POSITION 0,14:? #6;"▨ee▨
◙  e ▨"
755 POSITION 0,15:? #6;"▨e▨▨e▨▨▨▨▨▨▨▨▨
▨ ee▨▨"
760 POSITION 0,16:? #6;"▨ee▨e
 e▨▨▨"
765 POSITION 0,17:? #6;"▨▨e▨e▨▨▨▨▨▨▨▨▨
▨▨▨▨▨"
770 POSITION 0,18:? #6;"▨▨e▨e
 ▨▨▨▨"
775 POSITION 0,19:? #6;"▨▨e▨▨▨▨▨▨▨▨▨▨▨
▨ ▨▨▨▨"
780 POSITION 0,20:? #6;"  e▨▨▨▨▨▨▨▨▨▨▨
▨    ◙"
785 POSITION 0,21:? #6;"  e▨▨▨▨▨▨▨▨▨▨▨
▨    ◙"
790 POSITION 0,22:? #6;"▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨
▨▨▨▨▨"
795 RETURN
800 FOR X=0 TO 22:COLOR 32:PLOT 0,X:DR
AWTO 19,X:NEXT X
805 TIM=TIM+600
810 POSITION 0,2:? #6;"  ▨ ▨ ▨ ▨ ▨ ▨ ▨
▨"
815 POSITION 0,3:? #6;"  ▨▨▨▨▨▨▨▨▨▨▨▨▨
▨"
820 POSITION 0,4:? #6;"      ▨▨▨▨▨▨e
▨▨▨▨▨"
825 POSITION 0,5:? #6;"   e  ▨▨▨▨▨▨e
 ▨▨▨▨"
```




```
830 POSITION 0,6:? #6;"▨e▨e▨       ▨e▨
 ▨▨▨▨"
835 POSITION 0,7:? #6;"▨e▨e▨       ▨e▨
 ▨▨▨▨"
840 POSITION 0,8:? #6;" e▨e▨▨▨▨▨▨ ▨e▨
▨ ▨▨▨o"
845 POSITION 0,9:? #6;"▨e▨e▨▨▨▨▨▨ ▨e▨
   ▨"
850 POSITION 0,10:? #6;"▨e▨e▨      ▨e▨
   ▨"
855 POSITION 0,11:? #6;" e▨e▨ ▨▨▨▨▨▨e▨
j▨▨  ▨"
860 POSITION 0,12:? #6;"▨e▨e▨ ▨▨▨▨▨▨e▨
 ▨   ▨"
865 POSITION 0,13:? #6;"▨e▨e▨      ▨e▨
   ▨ ▨"
870 POSITION 0,14:? #6;" e▨e▨▨▨▨▨▨ ▨e▨
 ▨▨j▨"
```

```
875 POSITION 0,15:? #6;"▨e▨e▨▨     ▨e▨
 ▨"
880 POSITION 0,16:? #6;"▨e▨e▨▨▨ ▨▨▨▨e▨
 j▨▨ ▨"
885 POSITION 0,17:? #6;"▨e▨e▨▨▨ ▨▨▨▨e▨
 ▨   ▨"
890 POSITION 0,18:? #6;"▨e▨e ▨     ▨e▨
  ▨ ▨"
895 POSITION 0,19:? #6;"▨e▨e ▨▨▨▨▨  e▨
 ▨▨j▨"
900 POSITION 0,20:? #6;" e▨e ▨▨▨▨▨▨▨▨▨
 ▨"
905 POSITION 0,21:? #6;" e▨e      W▨▨▨▨▨
 ▨"
910 POSITION 0,22:? #6;"▨▨▨▨▨▨▨▨▨▨▨▨▨▨
▨▨▨▨▨"
915 RETURN
920 TIM=450:POSITION 0,2:? #6;"▨ ▨ ▨ ▨
 ▨ ▨ ▨ ▨ ▨ ▨ ▨"
925 POSITION 0,3:? #6;"▨▨▨▨▨▨▨▨▨▨▨▨▨▨
▨▨▨▨▨"
930 POSITION 0,4:? #6;"
 ▨"
935 POSITION 0,5:? #6;"▨e    e    e
 ▨"
940 POSITION 0,6:? #6;"▨e▨▨▨▨e▨▨▨▨▨▨e▨
▨▨▨ ▨"
945 POSITION 0,7:? #6;"▨e▨▨▨▨e▨▨▨▨▨▨e▨
▨▨▨ ▨"
950 POSITION 0,8:? #6;" e    e    e
 ▨ ▨"
955 POSITION 0,9:? #6;" e e  e   e  e
e ▨ ▨"
960 POSITION 0,10:? #6;"▨▨▨e▨▨▨▨▨▨e▨▨▨
▨e▨▨ ▨"
965 POSITION 0,11:? #6;"▨▨▨e▨▨▨▨▨▨e▨▨▨
▨e▨▨ ▨"
970 POSITION 0,12:? #6;"    e    e
 e ▨ ▨"
975 POSITION 0,13:? #6;"e  e  e   e  e
 e ▨ ▨"
980 POSITION 0,14:? #6;"e▨▨▨▨▨e▨▨▨▨▨▨e
▨▨▨▨ ▨"
985 POSITION 0,15:? #6;"e▨▨▨▨▨e▨▨▨▨▨▨e
▨▨▨▨ ▨"
990 POSITION 0,16:? #6;"e      e     e
 ▨ ▨"
995 POSITION 0,17:? #6;"e  e  e   e  e
 e ▨ ▨"
1000 POSITION 0,18:? #6;"▨▨▨e▨▨▨▨▨▨e▨▨
▨▨e▨▨ ▨"
1005 POSITION 0,19:? #6;"▨▨▨e▨▨▨▨▨▨e▨▨
▨▨e▨▨ ▨"
1010 POSITION 0,20:? #6;"    e    e
 e ▨ ▨"
1015 POSITION 0,21:? #6;"    e    e
 e ▨ ▨"
1020 POSITION 0,22:? #6;"▨▨▨▨▨▨▨▨▨▨▨▨▨▨
▨▨▨▨▨▨"
1025 FOR Z=1 TO 2:POSITION (RND(0)*10)
,9:? #6;"j":NEXT Z
1030 FOR Z=1 TO 2:POSITION (RND(0)*15)
,13:? #6;"j":NEXT Z
1035 FOR Z=1 TO 2:POSITION (RND(0)*15)
,17:? #6;"j":NEXT Z
1040 RETURN
1045 TIM=TIM+300:POSITION 0,2:? #6;"▨
▨ ▨             ▨ ▨"
1050 POSITION 0,3:? #6;"▨▨▨▨▨
 ▨▨▨"
1055 POSITION 0,4:? #6;"▨▨e
 ▨u▨"
1060 POSITION 0,5:? #6;"▨▨e
 ▨z▨"
1065 POSITION 0,6:? #6;"▨ee▨▨▨▨
 ▨e▨"
1070 POSITION 0,7:? #6;"▨ee▨▨▨▨
 ▨e▨"
1075 POSITION 0,8:? #6;"▨e▨▨▨▨
 ▨e▨"
1080 POSITION 0,9:? #6;"▨e▨▨▨
 ▨e▨"
1085 POSITION 0,10:? #6;"▨ee▨▨jjj
 ▨e▨"
1090 POSITION 0,11:? #6;"▨ee▨▨▨▨▨
 ▨e▨"
1095 POSITION 0,12:? #6;"▨▨ee▨▨▨▨
 ▨e▨"
1100 POSITION 0,13:? #6;"▨▨ee▨▨▨
 ▨e▨"
1105 POSITION 0,14:? #6;"▨▨▨e▨▨
 ▨e▨"
1110 POSITION 0,15:? #6;"▨▨▨e▨
 ▨e▨"
1115 POSITION 0,16:? #6;"▨▨ee▨
  e▨"
1120 POSITION 0,17:? #6;"▨▨ee▨
  e▨"
1125 POSITION 0,18:? #6;"▨ee▨▨ K
  e▨"
1130 POSITION 0,19:? #6;"▨ee▨▨j▨j j j
j j je▨"
1135 POSITION 0,20:? #6;" e▨▨▨ddddddddd
dddddd▨"
1140 POSITION 0,21:? #6;" e▨▨▨ddddddddd
dddddd▨"
1145 POSITION 0,22:? #6;"▨▨▨▨▨▨▨▨▨▨▨▨▨▨
▨▨▨▨▨▨▨"
1150 RETURN
1155 FOR Z=140 TO 0 STEP -2:SOUND 0,Z,
12,14:NEXT Z:SOUND 0,0,0,0:POSITION 5,
19:? #6;"▨▨▨▨▨▨▨▨▨▨▨▨▨▨"
1160 COLOR 32:PLOT GX,GY+2:RETURN
1165 GOSUB 1280
1170 REM DRAW CASTLE
1175 COLOR 165:PLOT 6,6:DRAWTO 6,8:FOR
 Z=0 TO 4:PLOT 7+Z,7:DRAWTO 7+Z,22:NEX
T Z
```

continued overleaf

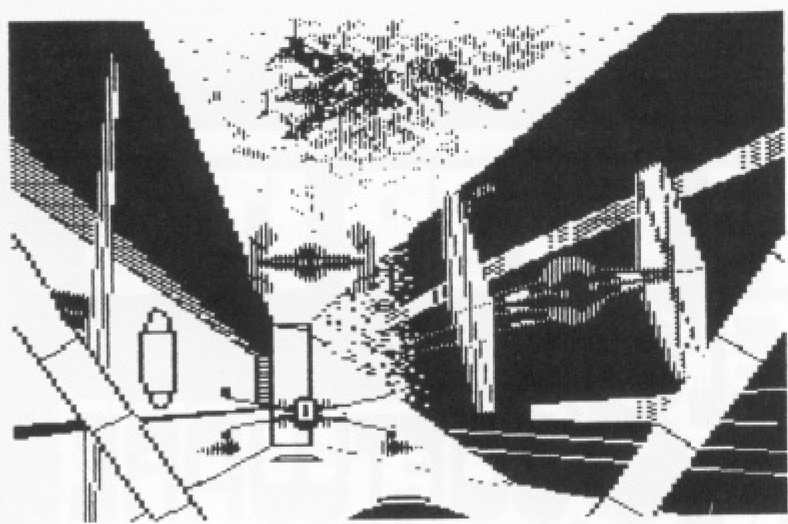
CAMELOT continued

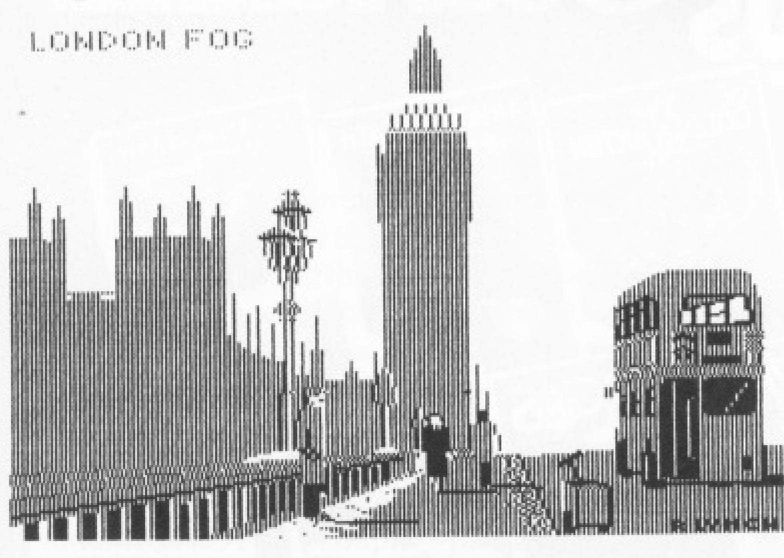
```
1180 PLOT 12,6:DRAWTO 12,8:COLOR 32:PL
OT 0,23:DRAWTO 19,23:POSITION 5,3:? #6
;"the hero"
1185 COLOR 35:PLOT 8,4:COLOR 38:PLOT 8
,5
1190 COLOR 165:PLOT 8,6:PLOT 10,6
1195 COLOR 32:PLOT 8,10:DRAWTO 8,14:PL
OT 9,9:DRAWTO 9,14:PLOT 10,10:DRAWTO 1
0,14
1200 POSITION 10,13:? #6;"U":POSITION
10,14:? #6;"▨"
1205 FOR X=X TO 120 STEP -1:GOSUB 1250
:NEXT X:GOTO 1225
1210 SOUND 1,0,0,0
1215 FOR X=X TO 120 STEP -1:GOSUB 1250
:NEXT X:GOTO 1225
1220 FOR X=X TO 120:GOSUB 1250:NEXT X
1225 IF Y>64 THEN FOR Y=Y TO 64 STEP -
1:GOSUB 1250:NEXT Y:GOTO 1245
1230 FOR Y=Y TO 64:GOSUB 1250:NEXT Y
1235 FOR Z=0 TO 255:POKE 704,Z:SOUND 1
,Z,14,14:NEXT Z
1240 FOR Z=255 TO 0 STEP -1:SOUND 1,Z,
14,14:NEXT Z
1245 SC=1:POP :POKE 704,138:GOTO 455
1250 A=USR(MOVE,0,PMB,PMD,X,Y,10):RETU
RN
1255 IF SC=1 THEN POSITION 0,5:? #6;"▨
"
1260 IF SC=2 THEN POSITION 14,14:? #6;
"▨"
1265 IF SC=3 THEN POSITION 7,8:? #6;"▨
"
1270 IF SC=4 THEN POSITION 8,21:? #6;"
▨"
1275 RETURN
1280 FOR Z=0 TO 22:COLOR 32:PLOT 0,Z:D
RAWTO 19,Z:NEXT Z:RETURN
1285 POSITION 0,2:? #6;" #
  #  "
1290 POSITION 0,3:? #6;" ▨&▨ ▨      ▨
 ▨&▨ "
1295 POSITION 0,4:? #6;" ▨▨▨▨▨camelot▨
▨▨▨▨"
1300 POSITION 0,5:? #6;" ▨▨ ▨▨      ▨
▨ ▨▨"
1305 POSITION 0,6:? #6;" ▨    ▨     ▨
  ▨"
1310 POSITION 0,7:? #6;" ▨ w ▨      ▨
 U ▨"
1315 POSITION 0,8:? #6;" ▨    ▨  ▨  ▨
▨ ▨"
1320 POSITION 0,9:? #6;" ▨▨e▨▨ ▨ ▨j▨ ▨
▨e▨▨"
1325 POSITION 0,10:? #6;" ▨▨e▨▨▨▨▨▨▨▨▨
▨▨e▨▨"
1330 POSITION 0,11:? #6;" ▨▨e▨▨▨▨▨▨▨▨▨
▨▨e▨▨"
1335 POSITION 0,12:? #6;" ▨▨e▨▨▨▨▨▨▨▨▨
▨▨e▨▨"
1340 POSITION 0,13:? #6;" ▨▨e▨▨▨▨''▨▨
▨▨e▨▨"
1345 POSITION 0,14:? #6;" ▨▨e▨▨▨''''▨
▨▨e▨▨"
1350 POSITION 0,15:? #6;" ▨▨e▨▨▨'''y▨
▨▨e▨▨"
1355 POSITION 0,16:? #6;" ▨▨e▨▨▨'''g▨
▨▨e▨▨"
1360 POSITION 0,17:? #6;" ▨▨e▨▨▨▨▨▨▨▨▨
▨▨e▨▨"
1365 POSITION 0,18:? #6;"dddddddddddd
dddddd"
1370 POSITION 0,19:? #6;"dddddddddddd
dddddd"
1375 POSITION 0,20:? #6;"dddddddddddd
dddddd"
1380 POSITION 0,21:? #6;"dddddddddddd
dddddd"
1385 POSITION 0,22:? #6;"ddd press sta
rt ddd"
1390 IF PEEK(53279)<>6 THEN 1390
1395 GOSUB 1280:GOTO 210
1400 GOTO 1400
1405 GRAPHICS 2:POSITION 6,4:? #6;"CAM
ELOT"
1410 POKE 708,56:POKE 710,0:POKE 709,1
24:POKE 711,118
1415 POKE 752,1
1420 POSITION 2,6:? #6;"by allan knopp
":POSITION 2,7:? #6;"with help from":P
OSITION 3,8:? #6;"justin knopp"
1425 ? "PRESS START  TO BEGIN
            OPTION TO RESTART DURING
 GAME"
1430 IF PEEK(53279)<>6 THEN 1430
1435 POSITION 2,2:? #6;"back in a mome
nt"
1440 FOR W=0 TO 150:SOUND 1,W,10,10:NE
XT W:SOUND 1,0,0,0
1445 GOTO 110
1450 DATA 216,104,104,104,133,213,104,
24,105,2,133,206,104,133,205,104,133,2
04,104,133,203,104,104,133,208
1455 DATA 104,104,133,209,104,104,24,1
01,209,133,207,166,213,240,16,165,205,
24,105,128,133,205,165,206,105
1460 DATA 0,133,206,202,208,240,160,0,
162,0,196,209,144,19,196,207,176,15,13
2,212,138,168,177,203,164
1465 DATA 212,145,205,232,169,0,240,4,
169,0,145,205,200,192,128,208,224,166,
213,165,208,157,0,208,96
1470 DATA 16,57,49,57,201,175,73,125,1
40,142
1475 DATA 36,0,16,36,16,24,52,56,92,12
6,90,102,60,24
```

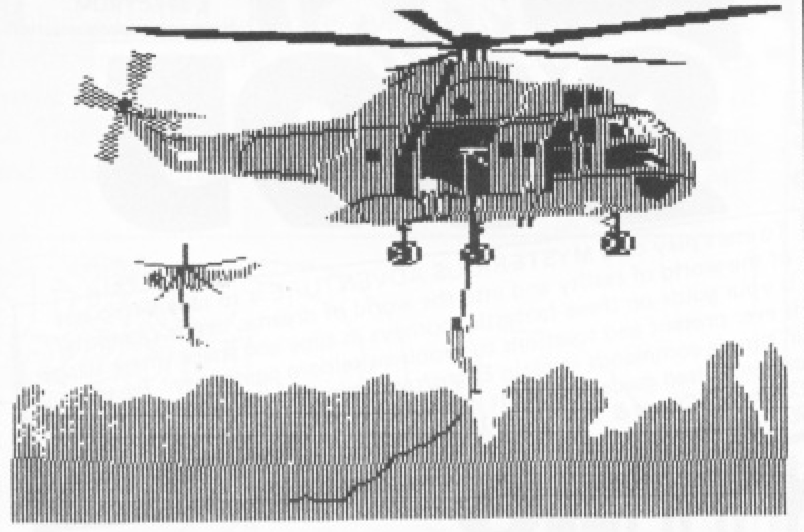
continued on page 46

SCREENDUMP

These Microscreens were drawn by Roy Lynch from Liverpool using Micropainter. Roy has been drawing on his Atari for nearly two years and has sent in a whole disk of pictures. He is 17 years of age and studying at school for his 'O' levels. He owns an Atari 800 with disk drive and cassette.







Have YOU drawn any pictures using your Atari? If they are in Micropainter format or use the Atari Touch Tablet please send them in for inclusion in future **SCREENDUMP**s.

Victagraph Plot Window

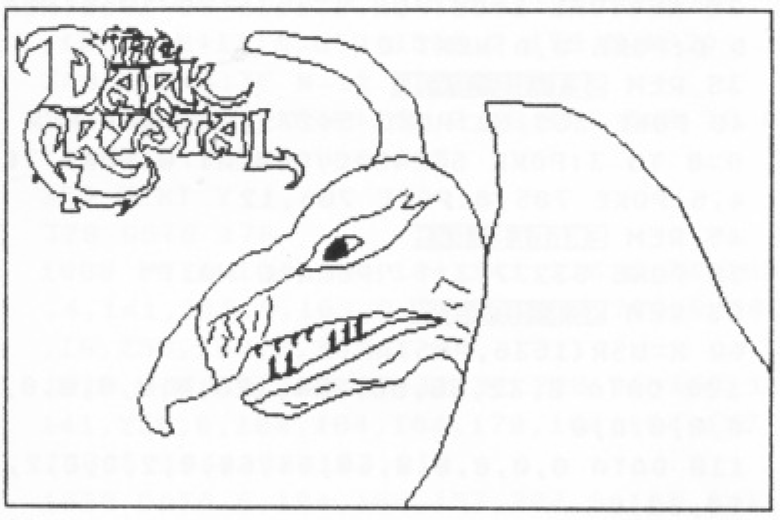
Reviewed by Les Ellingham

Back in issue 2 we reviewed the Victagraph Plot Window, a design aid for creating graphics on your Atari computer. The Victagraph has now been revised to include a comprehensive manual with a large section devoted to the 1020 printer/plotter and in view of the popularity of this printer I thought it was about time we had another look at the Victagraph.

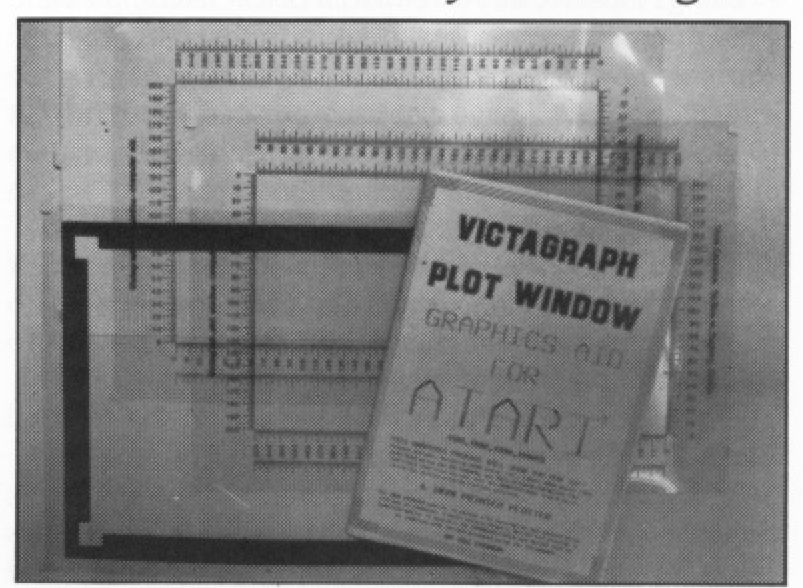
The Plot Window itself remains unchanged. To re-cap, it consists of four sheets of plastic measuring 17" x 12". One is a white base sheet, two are see-through sheets with scales of 320 horizontally by 200 vertically and the final sheet is a clear mask with sights at each corner which enable you to plot and read off points. Quite complex designs can be copied as the accompanying illustration shows. The scales are ideally suited to Graphics 8 although other modes can be used with either a smaller drawing or by scaling down. Good quality materials are used throughout and the Victagraph remains an inexpensive way to put quality graphics on the screen.

The new addition is a 46 page A4 size manual which will appeal especially to owners of the 1020 printer/plotter. Although concerned with the use of the Victagraph, the manual is an excellent introduction to graphics in general using many illustrative programs and most of the latter half relates directly to the 1020. Most of the design of the manual, including the cover, illustrations, headings and listings have been done with the 1020, showing just how versatile the machine is. The main text is typed with a good quality typewriter but this does not detract from the content of the manual.

All different sorts of graphics design are covered including comprehensive detail on the use of the little documented XIO FILL. Graphics modes 0 to 11 are fully explained with the colours available, resolutions etc. and demo programs are included for each. Other chapters cover the drawing of circles, grids and different kinds of fill. The section dealing specifically with the 1020 covers text and graphics modes and explains cartesian and relative co-ordinate systems to enable full use to be made of the printer. There follows a set of programs to enable easy placing of text, enhanced text, circle text (very impressive!) and rotated text in the graphics mode of the printer. It also includes three design aid programs making it possible to mix text and graphics as desired.



Skeksis by David Eaton using the Victagraph Plot Window.



An inexpensive aid to designing graphics

If you are at all interested in graphics design on your computer, the Victagraph will provide an inexpensive aid to creating complex designs. If you have a 1020 printer/plotter, it may be worth the price just for the manual for there is precious little in Atari's own manual to enable you to use the printer to the full.

The Victagraph Plot Window retails at £11.75 and can be obtained by your local dealer from Hi-Tech Distribution Ltd. Further enquiries may be made directly to the manufacturers, Victagraphics, 7, Speechley Drive, Rugeley, Staffs. Tel. 08894 78230.

```
0 REM ******************************
1 REM *      SIMPLE SYNTHESISER      *
2 REM *       BY LES ELLINGHAM       *
3 REM ******************************
6 REM PRESS ANY KEYS - TRY CVBNZ
7 REM PRESS START OR SELECT TO ALTER
     PITCH OR HOLD OPTION
10 POKE 53762,200:POKE 53761,168
20 POKE 53775,255
30 POKE 53768,1
40 IF PEEK(53279)=6 THEN POKE 53768,0
45 IF PEEK(53279)=5 THEN POKE 53768,1
50 IF PEEK(764)=255 THEN 40
60 POKE 53760,PEEK(764)
70 FOR I=15 TO 4 STEP -5:POKE 53761,16
0+I:NEXT I
80 IF PEEK(53279)=3 THEN 60
100 POKE 764,255:GOTO 40
```

Player Missile Graphics ...a machine code routine

Using Players to any extent from BASIC is complex and I have therefore come up with a routine that takes away all the fuss and allows a shape to be placed anywhere on the screen with ease. I have also incorporated a routine that allows different 'frames' to be used to achieve animation and I hope that readers will find this program of use in their own games.

The program uses machine code residing in page 6 of memory but allows horizontal and vertical movement to be controlled easily and rapidly from BASIC. There is also the facility for animation sequences up to 48 frames long. The machine code routine used is tied to the Vertical Blank Interrupt system to allow smooth movement.

The accompanying program demonstrates what is possible with the aid of a Shamus type character. Lines 1000 to 1080 hold the data for the machine code and lines 100 to 155 hold the data for the frames required. It is a good idea to save the program before you attempt to run it as any errors in the data statements could cause the system to crash. If you have a 16K system, the 144 in line 10 should be changed to 48.

To initialise the routine, the following BASIC command is used at the beginning of the program

A=USR(1536,PMSTART)

PMSTART is the page number of the beginning of the player/missile table and would normally be above the display memory.

Each frame is defined on a grid of 16 rows of 8 columns in a similar manner to the way characters are defined and up to 48 different patterns may be stored. The memory map for single line resolution players is normally as figure 1.

The program makes use of the unused 768 bytes to store the data for each frame. Thus frame 0 occupies PMSTART*256 to PMSTART*256+15, frame 1 occupies PMSTART*256+16 to PMSTART*256+31, frame 2 occupies PMSTART*256+32 to PMSTART*256+47 and so on.

Players are placed on the screen by the following command

A=USR(1568,P,X,Y,F)

the variables used are shown in figure 2.

Each player can access any frame, regardless of whether it is being used by another. The horizontal and vertical co-ordinates refer to the top left hand corner of the player, so to center it around point X,Y, the values X-4,Y-8 would have to be substituted into the USR call. Animation may be achieved simply by modifying the X,Y and F values and repeatedly calling the routine.

To incorporate the routine into you own programs, just omit lines from 100 to 999 and continue programming as usual.

Figure 1.

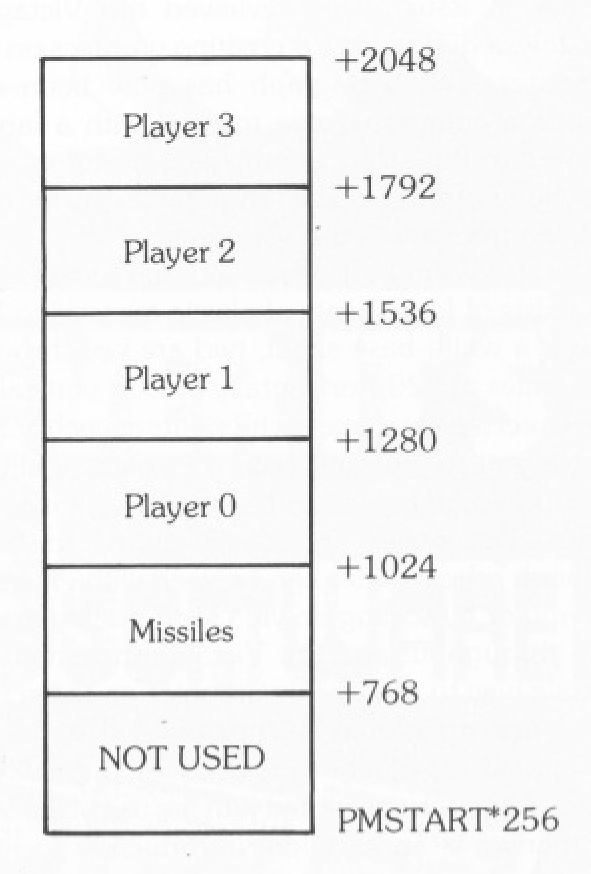
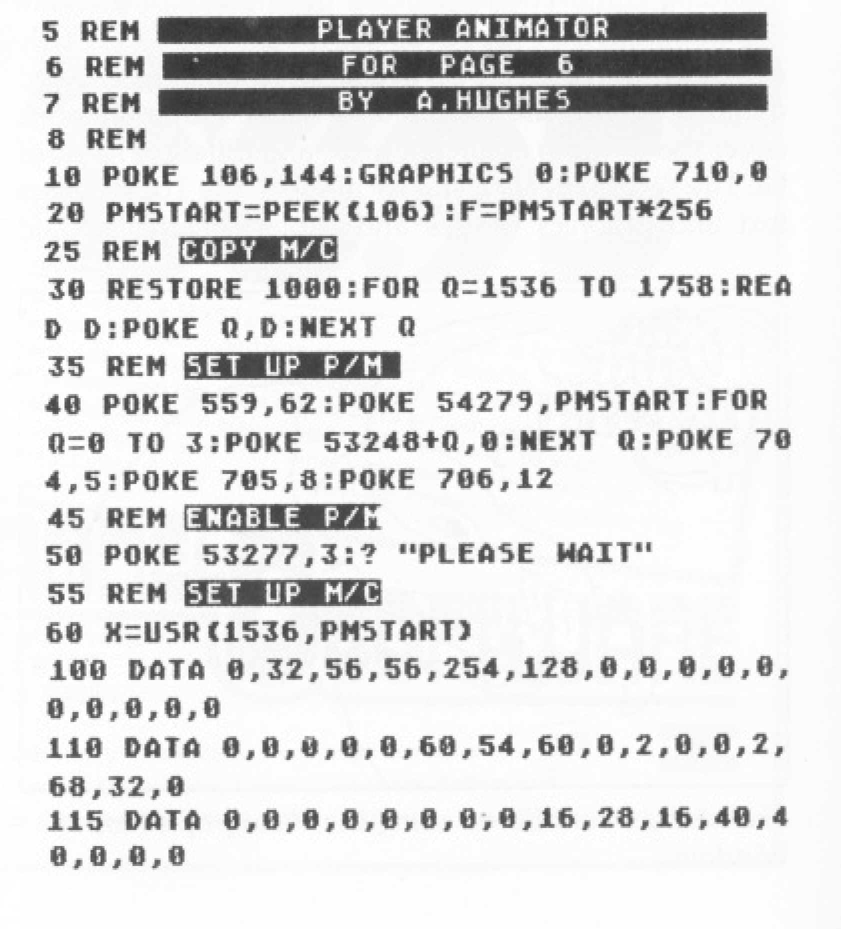


Figure 2.

P = player no. 0-3
X = horizontal position 0-255 (0 = left hand side)
Y = vertical position 0-240 (0=top)
F = frame number 0-47



```
5 REM       PLAYER ANIMATOR
6 REM         FOR  PAGE  6
7 REM         BY   A.HUGHES
8 REM
10 POKE 106,144:GRAPHICS 0:POKE 710,0
20 PMSTART=PEEK(106):F=PMSTART*256
25 REM COPY M/C
30 RESTORE 1000:FOR Q=1536 TO 1758:REA
D D:POKE Q,D:NEXT Q
35 REM SET UP P/M
40 POKE 559,62:POKE 54279,PMSTART:FOR
Q=0 TO 3:POKE 53248+Q,0:NEXT Q:POKE 70
4,5:POKE 705,8:POKE 706,12
45 REM ENABLE P/M
50 POKE 53277,3:? "PLEASE WAIT"
55 REM SET UP M/C
60 X=USR(1536,PMSTART)
100 DATA 0,32,56,56,254,128,0,0,0,0,0,
0,0,0,0,0
110 DATA 0,0,0,0,0,60,54,60,0,2,0,0,2,
68,32,0
115 DATA 0,0,0,0,0,0,0,0,16,28,16,40,4
0,0,0,0
```

by Anthony Hughes

```
120 DATA 32,56,56,254,128,0,0,0,0,0,0,
0,0,0,0,0
125 DATA 0,0,0,0,60,54,60,0,2,0,0,0,0,
0,28,0
126 DATA 0,0,0,0,0,0,0,16,28,16,16,16,
16,16,0,0
130 DATA 0,32,56,184,254,0,0,0,0,0,0,0
,0,0,0,0
135 DATA 0,0,0,0,0,0,0,0,56,2,0,128,0,
12,96,0
140 DATA 0,0,0,0,0,124,124,124,0,16,12
4,16,56,32,0,0
145 DATA 0,32,56,184,254,0,0,0,0,0,0,0
,0,0,0,0
150 DATA 0,0,0,0,0,0,0,0,56,128,0,2,0,
96,12,0
155 DATA 0,0,0,0,0,124,124,124,0,16,12
4,16,56,8,0,0
160 RESTORE 100:FOR Q=0 TO 191:READ D:
POKE F+Q,D:NEXT Q
165 REM ZONK INTO PLACE
170 FOR Q=0 TO 110 STEP 2
180 A=USR(1568,0,50,Q,0):A=USR(1568,1,
50,220-Q,1):A=USR(1568,2,160-Q,110,2)
190 SOUND 0,Q+20,10,10:SOUND 1,Q+21,10
,10:NEXT Q
195 SOUND 1,0,0,0
200 REM WALK ACROSS SCREEN
210 N=0
220 FOR X=50 TO 150
230 A=USR(1568,0,X,110,N):A=USR(1568,1
,X,110,N+1):A=USR(1568,2,X,110,N+2)
235 SOUND 0,N*10+100,2,10
240 N=N+3:IF N>5 THEN N=0
250 FOR D=0 TO 8:NEXT D:SOUND 0,0,0,0
260 NEXT X
300 REM WALK UP SCREEN
310 N=6
320 FOR Y=110 TO 1 STEP -1
330 A=USR(1568,0,150,Y,N):A=USR(1568,1
,150,Y,N+1):A=USR(1568,2,150,Y,N+2)
340 N=N+3:IF N=12 THEN N=6
350 SOUND 0,10*N+140,2,10:FOR D=0 TO 8
:NEXT D:SOUND 0,0,0,0
360 NEXT Y
370 GOTO 170
1000 DATA 104,104,104,141,218,6,24,105
,4,141,219,6,169,0,162,3,157,200,6,202
,16,250,169,7,162
1010 DATA 6,160,67,32,92,228,96,169,1,
141,220,6,104,104,104,170,104,104,157,
208,6,104,104,157,212
1020 DATA 6,104,104,157,204,6,169,1,15
7,200,6,169,0,141,220,6,96,173,220,6,2
40,3,76,98,228
1030 DATA 162,3,189,200,6,208,6,202,16
,248,76,98,228,142,216,6,169,0,157,200
,6,141,221,6,189
1040 DATA 204,6,201,16,16,21,189,204,6
,10,10,10,10,133,205,173,221,6,24,109,
218,6,133,206,76
1050 DATA 152,6,173,221,6,24,105,1,141
,221,6,189,204,6,56,233,16,157,204,6,2
01,16,48,213,76
1060 DATA 127,6,173,219,6,24,109,216,6
,133,204,169,0,133,203,160,255,145,203
,136,208,251,189,212,6
1070 DATA 133,203,160,0,177,205,145,20
3,200,192,16,208,247,174,216,6,189,208
,6,157,0,208,24,144,131
1080 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0
1090 DATA 192,208,224,240,0,0,0,0,0,0,
0
```

Review

ATARI GAMES and RECREATIONS

by H. Kohl, T.Khan et al.
Published by Reston Publishing Co.
Price £12.50

Basically, this book is a revamped version of the 'Atari Basic Manual' but presented in a simplified form with cartoons and footnotes. It is aimed at the absolute beginner who may be bored by examples in 'Atari Basic' and who wants to put some concepts to use in games.

The idea is a good one in that a concept, for example random numbers, is introduced and a program built up from two or three lines into a full-blown program. In Chapter 2, PLOT and DRAWTO are used with loops and RND numbers to produce a bogglingly boring program in which one half of the screen is filled methodically with squares while the other half PLOTs and DRAWTOs at random. The idea is to guess which screen will fill first. Not particularly impressive!

In the same way, graphics, strings, sound and colour are dealt with. A few subroutines are given on timing and score-keeping together with some sound routines for rocket lift-off, explosions, sirens etc.

This is a fair book for youngsters starting out because a program; of sorts, can be entered and run quite quickly but whilst being a fair attempt to introduce the basics in a palatable way, I feel that it does not give enough value for its price.

Review by C.L.Jones

BULL ANTS

by Sydney Brown

Bull Ants is basically a two player game although it can be played by one person.

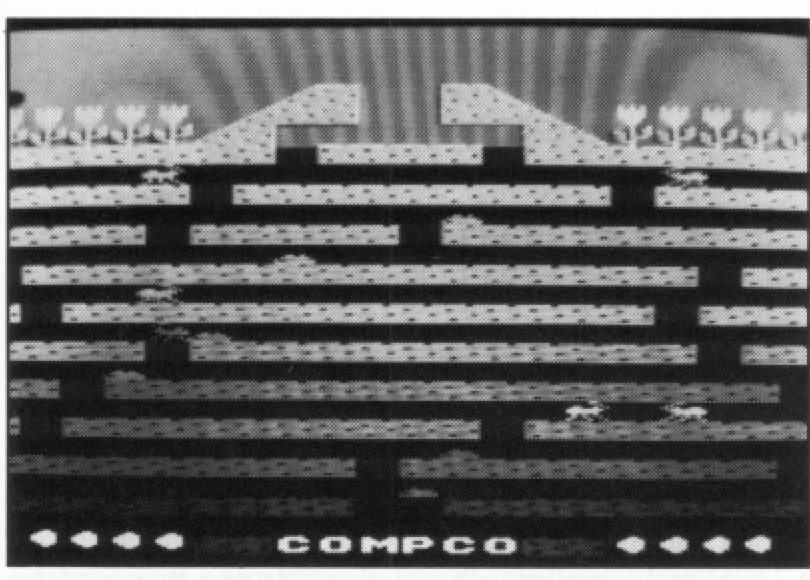
You and your friend are ants and you have lived happily in your nest for a long time but now the construction workers have moved into the neighbourhood and are using explosives to dig trenches for foundations of a new shopping centre. Another problem are the bull ants which have moved into your nest because their home was destroyed in the first phase of construction.

Use joysticks 1 & 2 to control the red and green ants. You must move your five eggs from the bottom of the nest to safety at the top of the screen. On the way up you must watch out for cave-ins and the bull ants.

If you are hit by a cave-in, you will be sent to the top of the screen. If you are stung by a bull ant, you will be paralysed and will have to wait for the next explosion to shock you out of it. In either case, if you were carrying an egg, you will lose it and it will be represented by a black egg appearing at the top of the screen on your side.

The winner is the one who gets the most eggs to the top safely. If both players get the same number, the winner will be the first to get them there.

```
0 REM ******************************
1 REM *          BULL ANTS         *
2 REM *       BY SYDNEY BROWN      *
3 REM * -------------------------- *
4 REM *     First published in     *
5 REM *       ACE NEWSLETTER,      *
6 REM *    3662, VINE MAPLE DRIVE  *
7 REM *    EUGENE, OREGON, U.S.A.  *
8 REM ******************************
9 REM
10 ? "K":SP=1:GOSUB 2000
200 ST=STICK(0):POKE 53278,0:A1=A1+SP:IF A1>215 THEN A1=10
201 IF GOT1=1 THEN 209
202 POKE 53250,A1:IF ST=14 AND V1>0 THEN LOCATE H1,V1-1,Z:IF Z=32 THEN COLOR 32:PLOT H1,V1:V1=V1-1:GOTO 209
203 IF ST=13 AND V1<22 THEN LOCATE H1,V1+1,Z:IF Z=32 THEN COLOR 32:PLOT H1,V1:V1=V1+1:GOTO 209
205 IF ST=11 AND H1>0 THEN LOCATE H1-1,V1,Z:IF Z=32 THEN COLOR 32:PLOT H1,V1:H1=H1-1:GOTO 209
207 IF ST=7 AND H1<19 THEN LOCATE H1+1,V1,Z:IF Z=32 THEN COLOR 32:PLOT H1,V1:H1=H1+1:GOTO 209
209 COLOR 247:PLOT H1,V1:IF V1=2 OR V1=22 THEN GOSUB 300
210 ST=STICK(1):A2=A2-SP:IF A2<10 THEN A2=200
211 IF GOT2=1 THEN 219
212 POKE 53251,A2:IF ST=14 AND V2>0 THEN LOCATE H2,V2-1,Z:IF Z=32 THEN COLOR 32:PLOT H2,V2:V2=V2-1:GOTO 219
213 IF ST=13 AND V2<22 THEN LOCATE H2,V2+1,Z:IF Z=32 THEN COLOR 32:PLOT H2,V2:V2=V2+1:GOTO 219
215 IF ST=11 AND H2>0 THEN LOCATE H2-1,V2,Z:IF Z=32 THEN COLOR 32:PLOT H2,V2:H2=H2-1:GOTO 219
217 IF ST=7 AND H2<19 THEN LOCATE H2+1,V2,Z:IF Z=32 THEN COLOR 32:PLOT H2,V2:H2=H2+1:GOTO 219
219 COLOR 216:PLOT H2,V2:IF V2=2 OR V2=22 THEN GOSUB 310
240 A1=A1+SP:IF A1>215 THEN A1=10
242 A2=A2-SP:IF A2<10 THEN A2=200
244 POKE 53250,A1:POKE 53251,A2
250 IF PEEK(53254)<>0 OR PEEK(53255)<>0 THEN GOSUB 500
276 IF EG1=5 AND EG2=5 THEN 600
278 IF PEEK(53279)=6 THEN 699
279 IF PEEK(53279)=5 THEN GOSUB 10000:POSITION 9,0:? #6;"S";SP;
280 RN=RN+1:IF RN<160 THEN 200
281 SOUND 0,49,8,15:FOR W=1 TO 21:POKE DL,128:FOR WW=1 TO 2:NEXT WW:POKE DL,240:FOR WW=1 TO 2:NEXT WW:NEXT W
282 FOR W=0 TO 5:COLOR 32:PLOT XY(0,W),XY(1,W):XY(0,W)=INT(20*RND(0)):LOCATE XY(0,W),XY(1,W),Z
283 SOUND 0,49,8,15-W*3:FOR WW=1 TO 10:NEXT WW:COLOR 95:PLOT XY(0,W),XY(1,W):IF Z<>32 THEN GOSUB 400
285 NEXT W:GOT1=0:GOT2=0:SOUND 0,255,0,4
299 POKE 77,0:RN=INT(150*RND(0)):GOTO 200
300 IF E1=1 THEN 320
302 LOCATE H1,V1+1,Z:IF Z<>122 OR H1>14 THEN RETURN
305 GOSUB 350:E1=1:N1=N1+1:COLOR 32:PLOT H1,V1+1:IF N1=5 AND FF=0 THEN FF=1
309 RETURN
310 IF E2=1 THEN 330
312 LOCATE H2,V2+1,Z:IF Z<>122 OR H2<14 THEN RETURN
315 GOSUB 360:E2=1:N2=N2+1:COLOR 32:PLOT H2,V2+1:IF N2=5 AND FF=0 THEN FF=2
319 RETURN
320 IF V1>2 THEN RETURN
325 GOSUB 350:COLOR 250:PLOT N1-1,0:E1=0:S1=S1+1:EG1=EG1+1:IF S1=5 THEN POP:GOTO 600
329 RETURN
330 IF V2>2 THEN RETURN
335 GOSUB 360:COLOR 218:PLOT 20-N2,0:E2=0:S2=S2+1:EG2=EG2+1:IF SS2=5 THEN PO
```




```
P :GOTO 600
339 RETURN
350 FOR W=15 TO 0 STEP -1:SOUND 0,14,1
0,W:NEXT W:SOUND 0,255,0,4:RETURN
360 FOR W=15 TO 0 STEP -1:SOUND 0,10,1
0,W:NEXT W:SOUND 0,255,0,4:RETURN
400 FOR WZ=250 TO 5 STEP -7:SOUND 0,WZ
,2,14:NEXT WZ:SOUND 0,255,8,6:IF Z=216
 THEN 450
405 H1=9:V1=2:COLOR 247:PLOT H1,V1
410 IF E1=0 THEN RETURN
415 E1=0:COLOR 122:PLOT N1-1,0:EG1=EG1
+1
449 RETURN
450 H2=10:V2=2:COLOR 216:PLOT H2,V2
460 IF E2=0 THEN RETURN
465 E2=0:COLOR 122:PLOT 20-N2,0:EG2=EG
2+1
499 RETURN
500 IF (PEEK(53254)=4 OR PEEK(53255)=4
) AND GOT2=0 THEN GOSUB 460:GOT2=1:GOT
O 510
502 IF (PEEK(53254)=8 OR PEEK(53255)=8
) AND GOT1=0 THEN GOSUB 410:GOT1=1:GOT
O 510
504 IF (PEEK(53254)=12 OR PEEK(53255)=
12) AND (GOT1=0 OR GOT2=0) THEN GOSUB
410:GOSUB 460:GOT1=1:GOT2=1:GOTO 510
509 GOTO 549
510 FOR W=30 TO 0 STEP -1:SOUND 0,7,6,
W/2:NEXT W:SOUND 0,255,0,4
549 POKE 53278,0:RETURN
600 IF S1=S2 THEN WIN=FF:GOTO 650
610 IF S1>S2 THEN WIN=1
620 IF S2>S1 THEN WIN=2
650 SOUND 0,0,0,0:IF WIN=1 THEN 690
660 POSITION 0,23:? #6;"^^^^^^the^^end
^^^^^^";:FOR W=1 TO 100:NEXT W:IF PEEK
(53279)=6 THEN 699
665 POSITION 0,23:? #6;"^^^^^^^^^^^^^^
^CHAMP";:FOR W=1 TO 100:NEXT W:IF PEEK
(53279)=6 THEN 699
668 GOTO 660
690 POSITION 0,23:? #6;"^^^^^^the^^end
^^^^^^";:FOR W=1 TO 100:NEXT W:IF PEEK
(53279)=6 THEN 699
695 POSITION 0,23:? #6;"champ^^^^^^^^^
^^^^^^";:FOR W=1 TO 100:NEXT W:IF PEEK
(53279)=6 THEN 699
698 GOTO 690
699 GOSUB 3191:GOT1=0:GOT2=0:GOTO 200
1000 DATA 12,2,101,254,252,84,82,137,4
8,64,166,127,63,42,74,145,42,42,62,62,
62,28,28,8,12,30,62,62,30,12,0,0
1010 DATA 9,11,75,107,110,104,56,8,1,3
,7,15,29,63,95,255,128,192,160
1020 DATA 240,248,252,222,255,251,255,
191,255,253,255,223,255,0,0,0,0,52,126
,191,255
2000 DIM P$(46),C$(50),XY(1,5):C$="←♥N
^◢←♥N^♥↑♥L\♥↑♥L\♥└♥JZ♥┴♥JZ♥┤ ♥HX♥●_HX♥─
___┼┼♥♥♥♥┼"
2002 P$="H◥H▁H▘♥═ ◥TI\P┘▗┝ ▇♥═┘┤ ▌PhH@┐
Pt▀┐/h[h※h@♥┝ ┝┤┐":P=ADR(P$):PH=INT(P/
256):PL=(P-PH*256):C=ADR(C$)
2005 CH=INT(C/256):CL=(C-CH*256):P$(21
)=CHR$(CL):P$(22)=CHR$(CH):XH=INT((P+4
1)/256):XL=(P+41)-(XH*256)
2010 P$(16)=CHR$(XL):P$(17)=CHR$(XH):P
$(33)=CHR$(XL):P$(34)=CHR$(XH):POKE 51
2,PL:POKE 513,PH
2100 FOR W=0 TO 5:XY(0,W)=0:NEXT W:XY(
1,0)=6:XY(1,1)=8:XY(1,2)=12:XY(1,3)=14
:XY(1,4)=18:XY(1,5)=20
2200 CB=PEEK(106)-8:POKE 106,CB:POKE 5
4279,CB:GRAPHICS 17:POKE 712,134:A=PEE
K(106)*256:POKE 708,30
3000 POSITION 0,0:? #6;"^^^   ^  ^ ^
  ^":? #6;"^  ^  ^  ^ ^   ^":? #6;"^^
^^  ^  ^ ^   ^"
3001 ? #6;"^   ^ ^  ^ ^   ^":? #6;"^
  ^ ^  ^ ^   ^":? #6;"^^^^^ ^^^^ ^^^^
 ^^^^"
3002 ? #6:? #6:? #6;"   ^^  ^   ^ ^^^
^^":? #6;"  ^  ^  ^^  ^   ^":? #6;" ^
  ^ ^^^ ^   ^"
3003 ? #6;" ^^^^^^ ^ ^^^   ^":? #6;" ^
    ^ ^  ^^   ^":? #6;" ^    ^ ^   ^
 ^":POKE 711,92:POKE 709,204
3005 POKE 756,CB:POSITION 4,21:? #6;"S
ETTING  UP"
3101 FOR B=0 TO 511:IF B>439 THEN READ
 D:POKE A+B,D:NEXT B:GOTO 3110
```

continued on page 44

Review

Music Maestro Please

Playing music on a computer is no substitute to learning or playing an instrument but computer music can be fun and, if you find the right program, can be educational. I will take a look here at two of the lesser known music programs for the Atari. POKEY PLAYER is more suited to the user who just wants to add some music to his programs without learning too much about music whilst ADVANCED MUSIC SYSTEM II will also cater for the more serious music enthusiast.

POKEY PLAYER: The program is named after the IC in Atari computers which generates sound and enables the user to program the computer to play music using three 'voices'. The documentation is quite comprehensive, and certainly adequate insofar as using the facilities of the program are concerned. One needs to know some basics about written music to be able to program a computer to play it, however 'user-friendly' the program is, and the documentation with POKEY PLAYER attempts to introduce music to a beginner in the subject. It does a fair job with respect to the program. From a purely musical point of view however, it is full of mistakes and misleading suggestions at least with regard to accepted musical education in England. I don't know if there is a different system in the U.S.A but I would doubt it. So, if you are new to music, take POKEY PLAYER's documentation as a rough guide only to music theory.

The disk contains a full directory of data, mostly demonstration tunes, but also an Editor, Compiler, Merge program and a Player. Three of these are BASIC programs, the Compiler is a binary file. There is also another program for advanced users.

Booting up the disk with BASIC installed loads and runs the Player, listing all the tunes available and asking for one's choice. There is a wide selection of styles, classical or modern, which show off the capabilities of the program and the computer. Some of the lively tunes and the baroque style of Bach and Handel come across very well, but the slower melodies tend to emphasise the raw square wave sound used by the computer.

Now, what about typing in some music? One enters the Editor program. This is a very clever program, using a custom display list, redefined characters and Player Missile Graphics. The perfect choice of colours and graphic detail give this a totally professional feel and the use of the joystick to enter notes is convenient and very easy to learn. Having the notes displayed on bass or treble staves, on a graphic keyboard and by name is very helpful to ensure that the correct note goes in. I found it quick to enter notes straight off of sheet music but there is a problem in checking the entry as there is no facility to listen to the notes just entered. One hears the pitches as they are stored but not in succession or time. The joystick is moved up or down to select a parameter - rests, pitches, note values or ties and from side to side to raise or lower the value of a note. Pressing the joystick button enters a note. The keyboard is also used to delete/insert, load/save, label and move measures and set tempo and sound quality.

I found the error checking and editing of entered tunes a major drawback with the program. One has to enter three voices before the program can play a tune, even if it means entering nothing but rests! *(An easy way around this is to save the first tune as .V1, duplicate this twice using DOS and rename the additional two files using .V2 and .V3. Ed.)* If the tune is playing too slowly for example, one has to reload the Editor program, then reload each of the three voices in turn, adjust the tempo on each and then save all three again. Next reload the Compiler (from DOS) and compile the three voices into one, then load the Player to hear the tune again. If it is still not right.....well you need patience! The editing of incorrect notes/tempos is so involved as to be an unacceptable time consumer for me and I suspect will be an aggravation to other users.

To end on a positive note, the music files are very compact, shown by a full disk directory but not a full disk, so if an application requires compact music files then one will have to perfect the art of entering music note by note without mistakes! There are 50 tunes on the disk so even if you do find entering your own tunes difficult there is plenty to listen to!

Editors note: One of the biggest advantages of POKEY PLAYER, not covered in the manual, is that the tunes can be added very easily to your own BASIC programs and played whilst the program is busy doing other things. In a later issue I hope to present a program that will allow you to take any of the tunes from the disk and add them to your own programs to be played whilst your program is running.

ADVANCED MUSIC SYSTEM II: The documentation begins "It is oriented towards those familiar with music notation and basic musical terms". There is no instruction on how to read music but there are plenty of books available for the beginner in music. I think it is much better to get a book specifically to learn music theory and then tackle music programming. If you are interested enough to want to use your Atari as a player, you will probably have a desire to learn about the theory of music or will have a basic knowledge from school.

Although this is an advanced music system, the instructions are very clear in showing one how to use the program, giving plenty of examples. The system handles 4 voices over 5½ octaves and is so efficient that it can play as fast as 2100 notes *a second*! Envelope control gives 3 levels of note decay, one can change the speed using a joystick while the music is playing, recording sync is provided for multi-tracking and the editor is fantastic! The system supports key signature, time signature (up to 32/32!), whole notes through to 64th notes (semibreve to

..... two music programs reviewed by Phil Brown

hemidemisemiquaver!) and odd note durations such as double dotted notes, triplets, septuplets and beyond. The editor performs 'musical syntax' check on note entry and, importantly, on whole measure (bar) entry. As soon as you have entered any notes you can press P to hear what they sound like, at whatever speed you choose. A very helpful feature when the notes are fresh in mind.

The program is autoboot disk, also available on cassette, written in machine language with several demo pieces, all well known classical pieces, each showing off a different capability, from Flight of the Bumblebee through Bach's Toccata & Fugue in D Minor to a Chopin Piano piece. As each piece of music is played there is a 5½ octave keyboard on the screen and one can see all the notes moving highlighted by a different colour for each voice - very impressive.

After booting the disk, the user is presented with a menu of functions available, including DOS functions. The most important is the Editor. Choice of this presents another screen where music can be typed in and edited. All entry is via the keyboard and it took me a while to get used to this, especially the American terms for notes such as halfnote, quarternote, eighthnote meaning, respectively, a minim, crotchet and quaver. It would probably help to draw a diagram of all notes with their English and American equivalents if you felt at all unsure. Also, since the octave of the pitch has to be specified by a number (1 - 6), it would help to draw up a diagram showing bass and treble cleffs and the places where the octaves change number. There is a prompt at the bottom of the screen to remind one of the note entry format which is NOTE / OCTAVE / DURATION / ENVELOPE / VOLUME.

These parameters all remain constant except the NOTE, so if the music has several notes of the same length, you only have to type the note letter (A - G). Facilities are there to repeat notes and phrases and delete notes or whole bars. I found it slow going at first, thinking of note names and values, then typing each one in, but after 2 or 3 sessions I became quicker and the last piece I typed in (one of Bach's Gavottes for 2 voices) took only two hours from start to finish - and that was on my 400 using my two finger typing technique!

It is very good practice using this program to enter music because it makes one follow correct musical convention. For example, you are not allowed on to the next bar until the present one is full. Anyone studying for music theory exams will appreciate the possibilities, such as entering ornaments, which AMS II handles a treat. If you would like to hear a quintuplet of quavers played against 4 quavers, AMS II can do it! My fingers boggle at the screen watching Chopin's music being played!

Whatever program one uses to play music on the Atari, the end result will depend on how well the programmer understands the composition of music. Altering the dynamics of each voice and the envelope of each note will make a big difference to the final sound and an efficient editor is vital to allow one to experiment with different ideas. With AMS II it is so easy to alter the tempo with a joystick and so get the right feel of the piece. This can be done for any number of bars and any combination of voices.

SOME FINAL THOUGHTS As with all computer programs it is sometimes asked "What is the point of it?" or "What use is it?". Apart from any amusement value, is there any point in playing music on a computer when one can buy pre-recorded music?

I have already mentioned the educational value of AMS II and this could be very important to some individuals. The actual sound isn't very good and the Atari does not have perfect pitch. The Atari can only generate raw square waves with these programs and this tends to be a bit harsh and uninteresting, even through a good hi-fi system, although to be fair, the varying envelopes and dynamics available do help. I recently patched the output of the Atari through my electronic organ, adding reverb, rotating loudspeaker, wah-wah etc. and the results were encouraging. There are interesting possibilities here. The ultimate would be to interface the Atari with the keyboard contacts so it could play the organ. This is done with other computers (e.g. the MIDI interface) so it must be possible with the Atari.

One can use music programs to generate parts of scores to play along with. This is a good discipline as Atari keeps perfect time and I can recommend this as a practical use.

One can type in difficult phrases to hear how they should sound. Music purists may not approve but I find it very helpful especially with some parts of Bach's music.

As a church organist I can look forward to the future with some trepidation and see my replacement being an Atari with a disk full of hymns, a disk of wedding music and a disk of funeral muisc with the Minister having a joystick in the lecturn to increase the speed on cold days!

POKEY PLAYER is available from PAGE 6 price £6.95 and requires a 48k disk system.

ADVANCED MUSIC SYSTEM II is available from LOTSABYTES, 15445 Ventura Blvd., Suite 10G, Sherman Oaks, CA 91413, U.S.A. price $14.95 plus 15% shipping.

●

CONTACT

WANTED: ANALOG issues 1 - 7, 10 & 16. ANTIC Vol.1 issues 1 - 4. Best prices paid or I have copies of ANTIC (V.2, 6, 7 & 11) and ANALOG 18 to swap. Also I will buy any faulty Atari equipment (not VCS or controllers). Finally I would like to meet any other users in the Watford area. Please contact Chris Bone, 10, Garston Drive, Watford, Herts, WD2 6LB. Tel. Garston 672235

WELLINGTON USERS GROUP: Anyone in the Wellington, Somerset area please contact Martin Rogers, 3, Wharf Cottages, Wellington, Somerset, TA21 0AJ

PROGRAM TYPING: I just don't have the time to type all the programs I would like and wish to contact other users with the view of swapping magazine programs. Please contact John Marshall, 70, Manesty Cres., Clifton Estate, Nottingham, NG11 9DU

MACHINE LANGUAGE: Can anyone advise me how to PLOT and DRAWTO in Graphics 10 using machine language? Michael Courtney, 64, First Avenue, Gillingham, Kent, ME7 2LG

GHOST TOWN: How can I find the Silver Cup? To my shame I have been stuck on this for 9 months! Can anyone help? I have completed Adventureland, Strange Odyssey amd Golden Baton and would be pleased to help others on these. Tom Gainford, 15, Veryan Court, Park Road, Crouch End, London, N.8. Tel. 01 340 0329

MORE ARTICLES PLEASE!

The number of articles we have available for future issues is now quite small, so how about having a go and writing an article for other Atari users to enjoy. Articles on any aspect of Atari computing are welcome. If there is an area of programming that interests you why not write an article about it?

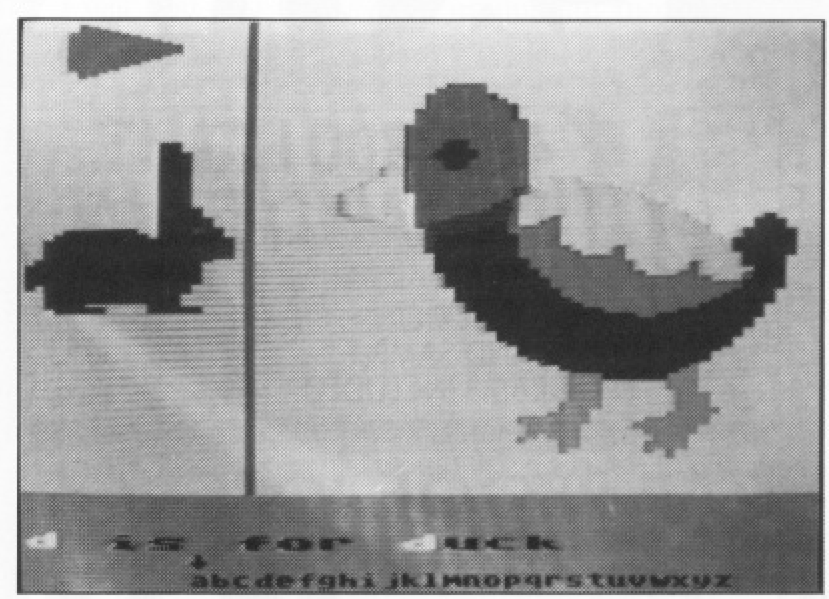
We try not to repeat previously published articles but if you can find a new variation or enhancement to an earlier article or program we would be pleased to hear from you. If you can come up with something that we have not covered, even better!

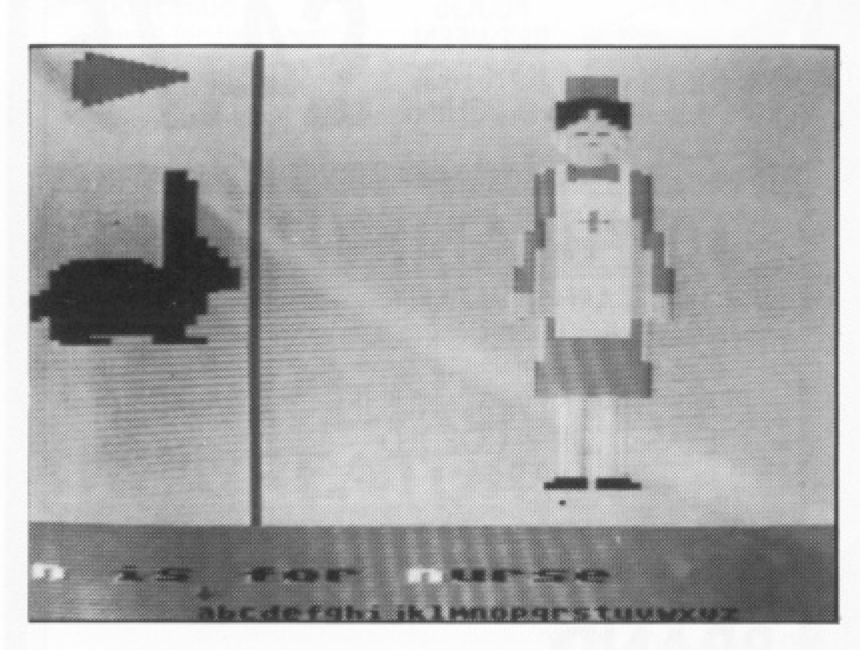
Don't forget programs either. In fact anything that interests you is bound to be of interest to other readers. Don't forget also that you may be the winner of next years Readers Poll!

ALPHABET .... 48k disk/cassette .... written by M. White ....

Alphabet is a pre-reading program for the average four to five year old very similar to Atari's My First Alphabet but written in this country and therefore without any problems of 'Americanisms'. The program was originaly accepted by Atari to be released in a line of home produced educational software but following the takeover, Atari decided not to publish it and it is now sold direct by the author.

The program presents a series of pictures for the child with a caption such as 'a is for apple' and the letters of the alphabet underneath for the child to identify the correct letter with which the word begins or ends. Generally the program is very good. There are one or two not so good points but more of those later. Firstly let's look at the good points.





The manual is excellent. It has been written in conjunction with a primary school teacher and, apart from explaining the program in detail, it contains a guide for you as a parent on how to use the program in conjunction with your child to get the most benefit. It makes it clear that learning with a computer requires active participation from both child and parent and proper encouragement whether the answers given are right or wrong. The program itself contains a picture for each letter of the alphabet with a corresponding word and a series of options for choosing a letter in that word. The order suggested by the authors is First letter of the word highlighted, last letter highlighted, either letter highlighted (at random), first letter normal (not distinguished from the rest of the word), last letter normal, either letter normal, first letter missing, last letter missing. Following this progression it becomes more and more difficult for the child but he/she should be able to tackle each level having learnt the last. Further options allow the pictures to be presented alphabetically or at random. Prior to playing, the game can be put in an autorun mode to enable the child to get used to the program.

When a picture is shown, the caption beneath will state, for example, 'j is for jam' and the child must use the joystick to move an arrow above the letters of the alphabet to choose the letter j. If he is correct the background of the screen flashes and a rabbit on the left hand side will be redrawn closer to a carrot. Each correct answer will move the rabbit nearer until he reaches the carrot when a nursery rhyme will be played. If the letter chosen is wrong, the program will give the correct answer and move the pointer to the correct letter.

The actual teaching side of the program has been well thought out and the pictures are very colourful. Graphics 10 has been used for extra colours but this does tend to make many of the pictures somewhat blocky. What of the other niggles? The sound could, and should, be a lot better. As each picture is drawn it is accompanied by a monotonous single rising or falling tone that aggravates, at least to adults, after two or three times. The rabbit is redrawn each time, slowly, whereas player missile graphics could have been used to add more interest and better movement. Getting out of a picture if the wrong one is chosen is by holding the option key but it is far too slow to react. Finally the packaging is pretty basic to say the least. Whilst there is no need to go to Atari extremes of selling more box than program, I feel that better presentation would add greatly to peoples acceptance of the program.

The educational value for the child cannot be faulted and it is on this that the program should finally be judged. Personally I prefer My First Alphabet but Alphabet is half the price and it is written in England. It is also available on cassette whilst My First Alphabet is only on disk.

Reviewed by Les Ellingham

DONKEY KONG JR .... Atari .... 16k ROM .... 1/2 players ....

This is the second part in what might be termed 'the exploits of Mario'. In case you did not know the story began with 'Mario the Mad Carpenter' rescuing his girlfriend, or trying to, from an even more mad gorilla called Kong.

In the second part of this delightful tale, Mario completely flips his lid, kicks out his girlfriend and imprisons Kong in a cage. Fortunately for Kong, his little lad, Kong Junior, finds out what sadistic Mario has done and sets out to the rescue. Mario, having experienced Kong's defence system creates one of his own. Thus the scene is set for our intrepid hero Kong Junior.

Mario's defences are very 'ape-oriented' with lots of ropes to climb and delicious fruit including, inevitably, bananas to grab. There are four different screens in all and they require practice to complete.

The first screen requires Kong Junior to climb ropes and jump chimney pots while avoiding Mario's deadly pets, the Snapjaws! Looking rather like oversized crocodile clips these come in two varieties, purple and blue. Purple Snapjaws move up and down the ropes whilst the blue ones slide down the ropes very quickly and drop off the end. Both types can be destroyed by dropping fruit on them. Kong is chained up in his cage at the top of the screen and when Junior finally reaches him, Mario pulls the cage out of reach off the screen.

The second screen is totally different. Now Kong Junior has to push several keys up their ropes to the scaffolding at the top. He is hindered by the Snapjaws and a squadron of geese who flap across the screen at different heights trying to dislodge him. When all the keys have been pushed home there is a delightful animated scene of Kong Jr. rescuing his dad and Kong kicking Mario who goes spinning into the sky.

All this fun is, however, short-lived for in screen three Kong is imprisoned again and Kong Junior has to climb ropes and ladders, travel across moving platforms and jump on a trampoline all while avoiding the geese who now drop eggs on him!

It is beyond my power (and sanity!) to reach the fourth screen which apparently is the most difficult of all! As in Donkey Kong the screens are split up and run in the order 1,2,1,3,2,4 and the game has one or two player options, choice of difficulty level and a freeze option.

Donkey Kong Junior is the best of the series with good graphics - colourful, detailed and original - and with good sound. The game is highly addictive and the expression on Kong Junior's face when he gets killed just has to be seen!

THE CREATOR .... Supersoft .... 48k disk/cassette ....

The CREATOR is a player-missile graphics design aid and is very similar to Channel 8's The Gonstructor. In fact it is so similar it could be a prototype.

A grid is presented on screen 22 bytes high by 8 wide on which points can be plotted with the joystick to form an image which the program then stores as a player. Several editing features are included but some are missing such as the ability to scroll the entire image left or right or up and down. Up to 99 images can be drawn and then put together in an animation sequence. When you are satisfied, these can be saved to cassette or disk as either a file or a program in BASIC.

This type of program is intended to take the hard work out of designing players for inclusion in your own programs and it does help but I have always felt (and this applies to The Constructor also) that if you are sufficiently advanced to incorporate player-missile graphics in your own programs, you should have no problem in either designing your own players or writing a simple utility to do it for you. Most programs of this nature just end up being fun to play with in their own right.

At £15 for the disk version and £10 for the cassette this is way overpriced (as is The Constructor) and with ANALOG having just published a Player/Missile Animator/Editor, I feel that the life of The Creator is limited.

THE HELPER .... Supersoft .... 16k cassette ....

The HELPER is an aid to Adventure players available from SuperSoft on cassette at £10. It enables you to load a cassette based machine code adventure into memory and then examine the listing for clues. It has a colourful introduction and a pleasant screen design but basically does no more than the listing on page 28 of issue 10 of PAGE 6.

I am sorry to be so negative about TWO products from the same company but I really feel that SuperSoft ought to think again. This would make an excellent magazine listing but as a commercial program it is just not worth £10. With the programs published by ANALOG and ANTIC becoming more and more sophisticated and the price of Atari ROM cartridges at £9.95, any programmer writing in BASIC needs to think long and hard about the commercial value of his program.

Reviewed by Craig Fuller and Les Ellingham

INTRODUCING THE COMPUTER THAT'S REALLY PUT THE COMPETITION'S NOSE OUT OF JOINT.

The ATARI 800XL has got everything the Commodore 64 and other home computers have got. Plus a good deal more. And at £169 – with software prices starting at less than £10 – you don't have to pay through the trunk for it. Check for yourself:

FEATURES	REAL KEYBOARD	COMMUNICATIONS CAPABILITIES	BUILT-IN "BASIC"	MONITOR SOCKET	CARTRIDGE SLOT	SPRITES	PROGRAMMABLE JOY STICK PORTS	64K RAM	CASSETTE "SOUND TRACK" CAPABILITIES	DIAGNOSTIC "SELF TEST"	MAX 256 COLOURS ON SCREEN AT ONE TIME	4 "SOUND" VOICES
SINCLAIR SPECTRUM PLUS	✧	✧	✧									
ACORN ELECTRON	✧	✧	✧	✧								
COMMODORE 64	✧	✧	✧	✧	✧	✧	✧	✧				
ATARI 800XL	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

ATARI® 800XL

FOR FURTHER DETAILS, CONTACT YOUR NEAREST ATARI DEALER: BOOTS, CARREFOUR, CO-OP, CURRYS, DIXONS, GRANADA, LASKYS, LEWIS'S, LITTLEWOODS, MAKRO, RUMBELOWS, SILICA SHOP, SPECTRUM, VALLANCES, WIGFALLS, AND ALL OTHER COMPUTER SHOPS.

PENGO .... Microdeal .... 16k cassette .... 1/2 players ....

Reading the inlay card reveals that this version has all the features of the 'official' version and is commendable in that when two players are competing, you are offered the choice of either using one shared or two joysticks. So, at a glance, it would appear to be excellent value at £7.95. Do not be deceived! When the game is loaded, the reason for the lower price becomes apparent. The graphics are simple, but not bad. Willy (the penguin) is actually quite good but the Snobees (sealions in this version) are very crude blobs so poorly implemented that if two blocks should pass, one will disappear! Also the appearance of the blobs is so sudden and random that you often lose a life before the game has even started because a blob materialised on top of you!. The musical accompaniment is interesting but plays rather too fast. The general impression that I got was that Pengon was developed for the Spectrum and then cross-assembled onto an Atari with no effort made to make use of Atari's additional features.

Pengon is better than many cheap Atari games but now that Atari's own Pengo is available at £9.95 the saving on this version is hardly worth considering.

Chris Bone

You may have noticed that we seldom review any of the latest American titles and sometimes, as in this issue, we do not have many reviews and have to include programs that are quite well known. The reason is simple - none of the major importers such as Centresoft or U.S. Gold send out copies of their programs for review. You don't often see them in the national magazines either. Most producers or distributors of Atari software have an incredible lack of understanding of the power of a review to sell a program. I suppose that that is their loss but in another way readers of the magazine lose out and it is a problem that I am well aware of.

A distributor or producer directly benefits from sales generated by reviews. There is little reason for a retailer to give away review copies as he will not generally benefit from ALL of the sales but if any retailer reading this would like to send in the occasional (or regular) review copy of some of the American software, I will ensure that they are given full credit as the source from which the program may be obtained

I am trying to broaden the scope of The Software Reviews. To purchase programs myself would be prohibitively expensive and even hiring programs has its problems. I would like to set up a review panel of two or three readers who could be sent software to review but at the moment so little is received that it is not feasible. If you have any suggestions please let me know but in the meantime how about sending in some reviews of software you have bought?

Reviewed by Chris Bone

BULL ANTS continued from page 35

```
3106 POKE A+B,PEEK(57344+B):NEXT B
3110 POKE 756,CB
3150 DL=PEEK(560)+256*PEEK(561):POKE D
L,240:FOR W=DL+7 TO DL+28 STEP 3:POKE
W,134:NEXT W:ZB=CB*256
3155 FOR W=53248 TO 53255:POKE W,0:NEX
T W:FOR W=ZB+1536 TO ZB+2048:POKE W,0:
NEXT W:POKE 53277,3:POKE 559,62
3160 POKE 706,12:POKE 707,12:POKE 5325
8,0:POKE 53259,0
3162 RESTORE 1000:FOR W=1 TO 8:READ D:
POKE ZB+1599+W,D:POKE ZB+1647+W,D:NEXT
 W
3163 FOR W=1 TO 8:READ D:POKE ZB+1855+
W,D:POKE ZB+1951+W,D:NEXT W
3170 POSITION 1,20:? #6;"select---SPEE
D = ";SP:FOR W=1 TO 35:NEXT W
3171 POSITION 1,21:? #6;"start---START
 GAME"
3175 IF PEEK(53279)=5 THEN GOSUB 10000
:GOTO 3170
3189 IF PEEK(53279)<>6 THEN 3175
3191 POSITION 0,0:? #6;"K          \^  ^]
      yyyyy \^^   ^^] yyyyy[[[[[\^
  ^][[[[[^^^^^^^^ ^^^^ ^^^^^^^^"
3192 FOR W=5 TO 19 STEP 2:POSITION 0,W
:? #6;"^^^^^^^^^^^^^^^^^^^^^^^^^^":COLOR 32:
PLOT INT(RND(0)*10),W
3193 PLOT INT(RND(0)*10)+10,W:NEXT W:P
OSITION 0,21:? #6;"^^^^^^^^^^^  ^^^^^^^^
^":? #6;"zzzzz^^COMPCO^^zzzzz";
3195 POKE 54286,192:H1=0:V1=22:H2=19:V
2=22:COLOR 247:PLOT H1,V1:COLOR 216:PL
OT H2,V2:A1=0:A2=200:EG1=0:EG2=0
3199 RN=INT(150*RND(0)):E1=0:E2=0:M1=0
:M2=0:SOUND 0,255,0,4:FF=0:S1=0:S2=0:R
ETURN
4000 RETURN
10000 SP=SP+1:IF SP>4 THEN SP=1
10001 IF PEEK(53279)=7 THEN RETURN
10002 GOTO 10001
```

□

BACK ISSUES

Issue 4 - includes Lunar V - Arcade Action - Merlin's Magic Square - Memory Mapped Screens - Basic Timing - Grab an Apple - Software Reviews - Disk Sort - First Steps

Issue 5 - includes Target - Memory Mapped Screens - Squares - Arcade Action (Miner 2049er) - Vertical P/M movement - Software Reviews -First Steps - Colour Selector - Line Lister

All the above issues now in short supply!!



Issue 7

Slots
Seasons Greetings
Grubs
Going for a Drive
BUGS
Atari Basic Sourcebook
Your Own Bulletin Board
First Steps
Largeprint



Issue 8

Wildwest
Demo 21
Sonar Search
Player Missile Graphics
Graphics 8 Text
Using XIO FILL
The Hardware Facts
Return Key Mode
Make Your 410 Work!



Issue 9

Hungry Horris
Another Brick in the Wall
Fine Scrolling
Understanding Strings
Player Missile Graphics 2
Text Draw
MiniDos
Adventure
...and lots more!



Issue 10 - Adventure Special

Adventureland
Scott Adams Interview
Atari Adventures
When All Else Fails
House of Secrets
Diamonds
Spinner
Screen Color
...plus the usual features.



Issue 11

Grid
Landscape
Flags
Colourflow
Player Missile Graphics
What is USR
Reset Routines
Varsort 1
....plus the regular columns.

Issue 12 also available

Issues 1 2 3 & 6 SOLD OUT
Issues 4 - 8 £1.00 inc. postage
Issue 9 onwards £1.20 inc. postage
Overseas readers please see page 3

DUST COVERS

Don't risk a breakdown of your precious equipment through dust and dirt or spilt coffee! Protect all of your equipment with a custom made dust cover. Natural PVC with a brown trim - easily folded away when your equipment is in use. Easily fitted with all peripherals, joysticks etc. in place.

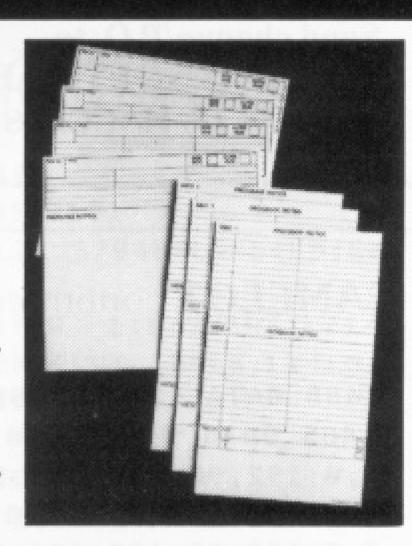
400/800/600XL/800XL	£2.95
410 Old Style Cassette*	£1.95
410 New Style Cassette	£1.95
1010 Cassette	£1.95
810/1050 Disk Drive	£2.95
1020/1027 Printers	£3.95

*old style does not have a pause button.

Also for all popular printers (normally £3.95 for small/medium size and £4.95 for large printers).

DISK/CASSETTE CARDS

Keep track of your programs easily and tidily.



Disk insert cards. Pack of 25.

Cassette inlay cards. Pack of 25.

£1.00 each pack inc. postage.

THE PAGE 6 LIBRARY

Available to subscribers only, the **PAGE 6 LIBRARY** is a fine collection of Public Domain programs from around the world. Hundreds of user-written programs (including machine-code) at very little cost. Available on disk only. Send a stamped addressed if you have not had current details.

ORDER ALL ITEMS ON THIS PAGE FROM
PAGE 6 MAGAZINE
P.O.BOX 54,
STAFFORD
ST16 1DR

Please make cheques payable to PAGE 6.

CAMELOT continued from page 28

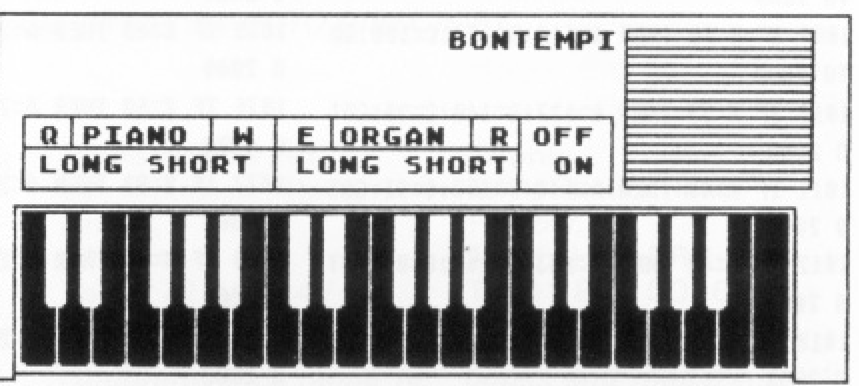
```
1480 DATA 192,96,108,124,56,126,175,65
1485 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
0,0,192,96,108,124,56,126,175,65
1490 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
0,0,192,96,108,124,56,126,175,65
1495 RETURN
1500 DATA 8,16,16,16,56,76,158,190,254
,124,56
1505 REM EDIT CHARACTER SET
1510 RESTORE 1555
1515 MEMTOP=PEEK(106):GRTOP=MEMTOP-4
1520 POKE 106,GRTOP:GRAPHICS 1+16:CHRO
M=PEEK(756)*256
1525 CHRAM=GRTOP*256:POKE 756,GRTOP
1530 FOR N=0 TO 1023:POKE CHRAM+N,PEEK
(CHROM+N):NEXT N
1535 FOR K=1 TO 13:READ R$:R=ASC(R$)
1540 IF R<32 THEN R=R+64
1545 IF R<96 THEN IF R>31 THEN R=R-32
1550 FOR I=0 TO 7:READ A:A(I)=A:B=I+R*
8+256*GRTOP:POKE B,A:NEXT I:NEXT K
1555 DATA %
1560 DATA 91,254,155,253,55,78,54,0
1565 DATA @
1570 DATA 255,195,195,195,255,195,195,
195
1575 DATA Z
1580 DATA 24,60,60,126,126,126,255,255
1585 DATA Q
1590 DATA 255,219,165,129,219,255,128,
128
1595 DATA U
1600 DATA 129,129,153,153,90,36,60,24
1605 DATA Y
1610 DATA 255,195,129,129,129,129,195,
231
1615 DATA G
1620 DATA 195,195,129,129,129,129,129,
255
1625 DATA W
1630 DATA 14,26,14,20,32,64,160,64
1635 DATA J
1640 DATA 102,24,126,189,36,90,129,129
1645 DATA D
1650 DATA 255,241,70,31,255,231,25,124
1655 DATA #
1660 DATA 240,222,213,211,149,245,159,
129
1665 DATA &
1670 DATA 128,128,128,128,128,128,128,
128
1675 DATA K
1680 DATA 144,88,32,208,72,4,2,1
1685 RETURN
```

□

Music Maker

by Colin Faller

Turn the keyboard of your Atari into a piano or organ with Music Maker! The program has long or short notes and is fully documented. All you need to play your Atari is there on the screen. Make music!




```
PRESS START TO DISPLAY LETTERS
PRESS SELECT FOR NO LETTERS
```

```
0 REM ******************************
1 REM **       MUSIC  MAKER       **
2 REM **            BY            **
3 REM **      COLIN FALLER        **
4 REM ******************************
5 REM
6 POKE 731,1
7 OPEN #1,4,0,"K:":GOSUB 11000
8 POKE 82,0
9 DIM L1$(80),L$(40),LC(40),A$(50)
10 GRAPHICS 8:COLOR 1:SETCOLOR 2,9,0:SETCOLOR 1,9,14:SETCOLOR 4,9,0:POKE 752,1
20 PLOT 10,78:DRAWTO 296,78:DRAWTO 296,130:DRAWTO 10,130:DRAWTO 10,78
21 FOR Q=10 TO 296:PLOT Q,79:DRAWTO Q,130:NEXT Q
30 FOR A=10 TO 290 STEP 13
35 PLOT A,79:DRAWTO A,130:COLOR 0:DRAWTO A+1,130:DRAWTO A-1,130
40 NEXT A:PLOT 295,130
50 FOR A=79 TO 110
60 PLOT 19,A:DRAWTO 26,A:PLOT 32,A:DRAWTO 39,A:PLOT 58,A:DRAWTO 65,A:PLOT 71,A:DRAWTO 78,A:PLOT 84,A:DRAWTO 91,A
65 PLOT 110,A:DRAWTO 117,A:PLOT 123,A:DRAWTO 130,A:PLOT 149,A:DRAWTO 156,A:PLOT 162,A:DRAWTO 169,A:PLOT 175,A
66 DRAWTO 182,A:PLOT 201,A:DRAWTO 208,A:PLOT 214,A:DRAWTO 221,A:PLOT 240,A:DRAWTO 247,A:PLOT 253,A:DRAWTO 260,A
67 PLOT 266,A:DRAWTO 273,A
70 NEXT A:COLOR 1
80 FOR A=19 TO 273 STEP 13:PLOT A,110:PLOT A+7,110:NEXT A
90 PLOT 0,135:DRAWTO 7,135:DRAWTO 7,76:DRAWTO 299,76:DRAWTO 299,135:DRAWTO 319,135:DRAWTO 319,10:DRAWTO 0,10
95 DRAWTO 0,135:PLOT 7,133:DRAWTO 299,133
97 PLOT 305,15:DRAWTO 305,69:DRAWTO 235,69:DRAWTO 235,15:DRAWTO 305,15:FOR T=15 TO 69 STEP 3:PLOT 305,T
98 DRAWTO 235,T:NEXT T
99 PLOT 10,70:DRAWTO 230,70:DRAWTO 230,45:DRAWTO 10,45:DRAWTO 10,70:GOTO 10000
100 COLOR 1
200 L1$="ASDFGHJKL;+*ZXCVBNM[]/":FOR L=1 TO LEN(L1$):L$=L1$(L,L):LX=L*13:LY=150:GOSUB 240
210 NEXT L
220 L1$="E1 234 56 789 0< >-=":FOR L=1 TO LEN(L1$):L$=L1$(L,L):LX=L*13+6:LY=140:GOSUB 240
230 NEXT L:GOTO 10100
240 L$=L$(1,1):LA=ASC(L$)
250 FOR L9=0 TO 7:LZ1=57088+LA*8+L9:LZ1=PEEK(LZ1)
260 FOR L8=7 TO 0 STEP -1:LZ2=INT(LZ1/2):IF LZ2*2<LZ1 THEN PLOT LX+L8,LY+L9
270 LZ1=LZ2:NEXT L8:NEXT L9
280 RETURN
800 Z=135:COLOR 1:GET #1,X
900 IF X=87 THEN I=15:O=0:P=-1:COLOR 0:PLOT 15,66:DRAWTO 194,66:COLOR 1:PLOT 55,66:DRAWTO 95,66
910 IF X=81 THEN I=15:O=0:P=-0.6:COLOR 0:PLOT 15,66:DRAWTO 194,66:COLOR 1:PLOT 15,66:DRAWTO 50,66
920 IF X=69 THEN I=0:O=15:P=0.7:COLOR 0:PLOT 15,66:DRAWTO 194,66:COLOR 1:PLOT 110,66:DRAWTO 144,66
930 IF X=82 THEN I=0:O=15:P=1.5:COLOR 0:PLOT 15,66:DRAWTO 194,66:COLOR 1:PLOT 150,66:DRAWTO 192,66
1001 IF X=65 THEN A=10:B=23:C=251:GOTO 2000
1002 IF X=83 THEN A=23:B=36:C=217:GOTO 2000
1003 IF X=68 THEN A=36:B=49:C=193:GOTO 2000
1004 IF X=70 THEN A=49:B=62:C=182:GOTO 2000
1005 IF X=71 THEN A=62:B=75:C=162:GOTO 2000
1006 IF X=72 THEN A=75:B=88:C=144:GOTO 2000
```

continued overleaf

MUSIC MAKER continued

```
1007 IF X=74 THEN A=88:B=101:C=128:GOT
0 2000
1008 IF X=75 THEN A=101:B=114:C=121:GO
TO 2000
1009 IF X=76 THEN A=114:B=127:C=108:GO
TO 2000
1010 IF X=59 THEN A=127:B=140:C=96:GOT
0 2000
1011 IF X=43 THEN A=140:B=153:C=91:GOT
0 2000
1012 IF X=42 THEN A=153:B=166:C=81:GOT
0 2000
1013 IF X=90 THEN A=166:B=179:C=72:GOT
0 2000
1014 IF X=88 THEN A=179:B=192:C=64:GOT
0 2000
1015 IF X=67 THEN A=192:B=205:C=60:GOT
0 2000
1016 IF X=86 THEN A=205:B=218:C=53:GOT
0 2000
1017 IF X=66 THEN A=218:B=231:C=47:GOT
0 2000
1018 IF X=78 THEN A=231:B=244:C=45:GOT
0 2000
1019 IF X=77 THEN A=244:B=257:C=40:GOT
0 2000
1020 IF X=44 THEN A=257:B=270:C=35:GOT
0 2000
1021 IF X=46 THEN A=270:B=283:C=31:GOT
0 2000
1022 IF X=47 THEN A=283:B=296:C=28:GOT
0 2000
1024 Z=73:IF X=27 THEN A=19:B=26:C=230
:GOTO 2000
1025 IF X=49 THEN A=32:B=39:C=204:GOTO
 2000
1026 IF X=50 THEN A=58:B=65:C=173:GOTO
 2000
1028 IF X=51 THEN A=71:B=78:C=153:GOTO
 2000
1029 IF X=52 THEN A=84:B=91:C=136:GOTO
 2000
1030 IF X=53 THEN A=110:B=117:C=114:GO
TO 2000
1031 IF X=54 THEN A=123:B=130:C=102:GO
TO 2000
1032 IF X=55 THEN A=149:B=156:C=85:GOT
0 2000
1033 IF X=56 THEN A=162:B=169:C=76:GOT
0 2000
1034 IF X=57 THEN A=175:B=182:C=68:GOT
0 2000
1035 IF X=48 THEN A=202:B=208:C=57:GOT
0 2000
1036 IF X=60 THEN A=214:B=221:C=50:GOT
0 2000
1037 IF X=62 THEN A=240:B=247:C=42:GOT
0 2000
1038 IF X=45 THEN A=253:B=260:C=37:GOT
0 2000
1039 IF X=61 THEN A=266:B=273:C=33:GOT
0 2000
1041 GOTO 800
2000 PLOT A,Z:DRAWTO B,Z:FOR W=I TO 0
STEP P:SOUND 1,C,10,W:NEXT W:COLOR 0:D
RAWTO A,Z:SOUND 1,0,0,0:GOTO 800
10000 M=57344:S=PEEK(88)+256*PEEK(89):
GOTO 10010
10002 FOR I=0 TO 7
10004 POKE S+I*40+R*40+C,PEEK(M+I+A*8)
10006 NEXT I:RETURN
10010 C=21:R=15
10015 FOR T=1 TO 8
10020 READ A
10025 DATA 34,47,46,52,37,45,48,41
10030 GOSUB 10002
10035 C=C+1:NEXT T
10037 C=2:R=58
10039 FOR T=1 TO 26
10041 READ A
10043 DATA 44,47,46,39,0,51,40,47,50,5
2,0,0,44,47,46,39,0,51,40,47,50,52,0,0
,47,46
10045 GOSUB 10002
10047 C=C+1:NEXT T
10050 C=2:R=48
10052 FOR T=1 TO 26
10054 READ A
10056 DATA 49,0,48,41,33,46,47,0,0,55,
0,0,37,0,47,50,39,33,46,0,0,50,0,47,38
,38
10058 GOSUB 10002
10060 C=C+1:NEXT T
10065 PLOT 28,45:FOR A=1 TO 18:READ T:
READ U
10070 DRAWTO T,U:NEXT A
10075 DATA 28,56,10,56,80,56,80,45,80,
 56,104,56,104,45,104,70,104,56,125,56,
125,45,125,56,177,56,177,45,177,56
10076 DATA 195,56,195,45,195,70
10079 ? " PRESS START TO DISPLAY LETTE
RS            PRESS SELECT FOR NO LETTER
S"
10080 IF PEEK(53279)=6 THEN GOTO 100
10081 IF PEEK(53279)=5 THEN GOTO 10100
10083 GOTO 10080
10100 ? :? :? "     PRESS ANY KEY TO SW
ITCH IT ON"
10105 PLOT 225,47:DRAWTO 199,47:DRAWTO
 199,56:DRAWTO 225,56:DRAWTO 225,47
10110 GET #1,B
10160 ? "K":COLOR 0:PLOT 225,47:DRAWTO
 199,47:DRAWTO 199,56:DRAWTO 225,56:DR
AWTO 225,47:COLOR 1:PLOT 225,57
10170 DRAWTO 205,57:DRAWTO 205,66:DRAW
TO 225,66:DRAWTO 225,57:GOTO 20000
11000 GRAPHICS 0:SETCOLOR 2,9,0:SETCOL
OR 4,9,0:SETCOLOR 1,9,12
11010 DL=PEEK(560)+256*PEEK(561)+4
11020 POKE DL+2,7:POKE DL+3,11
11030 POSITION 4,1:? "music Maker"
11040 POSITION 18,2:? "BY"
11050 POSITION 13,3:? "COLIN FALLER":?

11060 ? " MUSIC MAKER Is a piano Keybo
ard also an organ Keyboard. Both have
long and short notes."
11080 ? :? " The Piano - Q for long  W
 for short   "
11085 ? " The Organ - E for long  R fo
r short   "
11090 ? " The first line black keys.
          LOW E1234567890<>-= HIGH
           "
11095 ? :? " The second line white key
s            LOW ASDFGHJKL;+*ZXCVBNM[]
/ HIGH"
11111 ? :? "PRESS RETURN TO START  IT
WILL TAKE     40 SECONDS TO DRAW OUT T
HE PIANO"
11120 GET #1,Y
11130 RETURN
20000 GOTO 800
```

FIRST STEPS WILL BE BACK NEXT ISSUE!

As this is a special edition for Christmas, Mark Hutchinson's First Steps column has had to be held over to next issue. Mark would still like you to write to him at P.O.BOX 10, BELFAST, BT10 0DB. Do it now!

..STOP PRESS...STOP PRESS...STOP PR

NUTTY in issue 12 was a last minute addition and being such a short listing it was not fully checked but IT CANNOT BE TYPED AS IT IS SHOWN.
Lines 17, 40 & 41 (possibly others need all commands to be abbreviated and the 'Q' droppped from all variables. For example where SOUND Q0,Q0,Q0,Q0 appears type S0.0,0,0,0. It will run okay if you leave off all Q's.

GOTO DIRECTORY

The GOTO DIRECTORY is a guide to retailers who provide product support for Atari. Many of these retailers will supply Mail Order so if you have trouble finding a supplier, turn to the GOTO DIRECTORY.

A.S.Wootton & Sons,
116, Edleston Road,
Crewe,
CW2 7HD
Tel: 0270 214118

Nothing but Atari. Authorised Service Centre with fast turnaround of all repairs. The usual range plus printers, joystick inserts, extension leads at very good prices. Try us for repairs or purchases.

Channel One Computer Systems Ltd,
174, High Street,
Hornchurch,
Essex
Tel:Hornchurch (04024) 75613

We have a large range of software plus hardware, printers etc. A good selection of American software including the more unusual such as Compilers, Editors, Assemblers etc. All for Atari.

Home Entertainment Atari Center,
212-213 Broad Street,
Birmingham,
B15 1AY
Tel:021 643 9100

Your dedicated Atari retailer for the best in the wonderful world of Atari. Mail Order Software Courier service - phone 021 643 9100 or write FREEPOST. Atari authorised Independent Service Centre.

Norman Audio Ltd,
51, Fishergate,
Preston,
Lancs
Tel. 0772 53057

Authorised Atari Service Centre. Dealers in Atari products since 1978. Competitive prices and full after-sales back up. Personal service or Mail Order.

Home Entertainment Atari Center,
In-Store Shop,
Lower Ground Floor,
Owen Owen Store,
Mander Centre,
Wolverhampton
Tel: Wolverhampton (0902) 711650

Your in-store Atari Center specialising in Atari related products and including an Atari Service pick up point.

Jennings Stores,
248, Hertford Road,
(Nr. Green Street),
Enfield,
Middx.
Tel. 01 804 1767

Very large range of English and American software available as well as the very latest in hardware.

Microbyte,
71, Seaview Road,
Liscard,
Wallasey,
Merseyside, L45 4QW
Tel. 051 630 6933

Tired of high prices, poor service and hidden charges from other Mail Order retailers? Try us for the latest titles and U.S. mags. Visit or call anytime up to 7pm.

Retailers who are interested in an entry in this feature are invited to contact the Editor on 0785 41153.

Radford Hi-Fi Ltd,
52, Gloucester Road,
Bristol,
Avon
Tel:0272 428247

We stock and suport a comprehensive range of products for Atari. Huge range of software from educational to small business (plus games of course). Word processing packages. Printers. All for the best computer!

Fox's Computer Centre,
38/40 Upper Parliament Street,
Nottingham
Tel: 0602 414050 or 411556

We have the widest range of U.S. and U.K. hardware, software, books, magazines and accessories in the area. Latest products, best prices. Send s.a.e. for latest 'sale bin' lists.

Trionic,
144, Station Road,
Harrow,
Middx HA1 2RH
Tel:01 861 0036

Software, peripherals, books and magazines. A comprehensive range for Atari. Try our late night shopping. Open 10 a.m to 8 p.m. Monday to Saturday. Give us a call or pay us a visit.

York Computer Centre
7, Stonegate Arcade,
York
Tel: 0904 641862

Top American and English software - over 1000 titles! Hardware, books, magazines, accessories. If you need anything for your Atari, try Yorkshire's widest and most comprehensive range of products for your machine.

SOFTWARE PRODUCERS

PROMOTE YOUR PRODUCTS AROUND THE WORLD

Atari are compiling a worldwide database of every piece of software available for Atari machines in order to promote distribution at home and abroad. Your software may be included on this database at no cost if you send product specifications to Jon Dean at ATARI CORP. (UK) Ltd., Atari House, Railway Terrace, Slough, Berks, SL2 5BZ.

Any retailers, distributors and the like may have access to the database for customer enquiries but at present it will not be available to the general public so unless you are in the trade make your enquiries through your local retailer.

TYPO TABLES

BULL ANTS

Variable checksum = 881111

Line num range	Code	Length
0 - 200	DF	438
201 - 210	BK	508
211 - 242	XP	528
244 - 282	SE	513
283 - 315	HF	587
319 - 400	NX	590
405 - 504	KM	547
509 - 690	QK	607
695 - 2000	UQ	520
2002 - 2100	KD	561
2200 - 3003	JG	584
3005 - 3162	IS	534
3163 - 3193	UY	627
3195 - 10002	KY	386

PLAYER ANIMATOR

Variable checksum = 115697

Line num range	Code	Length
5 - 50	WR	460
55 - 145	GL	470
150 - 220	SL	511
230 - 340	NS	512
350 - 1040	MO	569
1050 - 1090	MW	362

MUSIC MAKER

Variable checksum = 373762

Line num range	Code	Length
0 - 20	CM	539
21 - 66	IR	552
67 - 99	OR	570
100 - 900	HG	604
910 - 1002	WT	552
1003 - 1011	LS	549
1012 - 1020	VW	549
1021 - 1030	MD	500
1031 - 1039	CH	549
1041 - 10035	NP	382
10037 - 10060	ZQ	333
10065 - 10110	EV	506
10160 - 11050	KN	507
11060 - 20000	WL	478

BOMB ESCAPE

Variable checksum = 447544

Line num range	Code	Length
1 - 50	FP	510
60 - 140	WZ	515
150 - 300	UD	561
350 - 500	EK	448
510 - 700	VE	528
710 - 910	EP	527
920 - 1020	KN	526
1030 - 1070	HL	557
1080 - 1120	JN	513
1130 - 1180	YO	474

FLIGHT OF THE SWAN 1

Variable checksum = 61841

Line num range	Code	Length
0 - 30	HX	547
100 - 150	SX	580
160 - 220	IB	565
230 - 280	YC	541
290 - 290	QA	89

FLIGHT OF THE SWAN 2

Variable checksum = 812793

Line num range	Code	Length
0 - 1040	MR	548
1050 - 1113	PV	540
1114 - 1140	GG	549
1145 - 1165	PK	500
1170 - 1191	VS	545
1195 - 1217	IE	558
1219 - 1227	IK	537
1228 - 1234	SS	564
1235 - 1241	EU	589
1242 - 1260	KW	539
1270 - 2060	FG	532
2065 - 3040	IJ	580
3050 - 3170	JC	488
3180 - 5016	QQ	553
5017 - 7000	JZ	556
7020 - 7240	RM	457
7250 - 8065	QI	545
8066 - 30000	RE	397

CAMELOT

Variable checksum = 1378911

Line num range	Code	Length
10 - 120	BQ	385
125 - 180	PD	444
185 - 230	NE	519
235 - 275	CA	638
280 - 325	CX	504
330 - 385	MJ	386
390 - 445	BA	406
450 - 505	ZU	500
510 - 545	YZ	556
550 - 595	DB	521
600 - 645	EB	540
650 - 695	BC	525
700 - 745	UJ	550
750 - 795	XO	500
800 - 845	SF	511
850 - 895	QH	550
900 - 945	GI	511
950 - 995	NO	550
1000 - 1040	UN	500
1045 - 1085	DA	509
1090 - 1135	LC	550
1140 - 1180	XR	558
1185 - 1225	YX	528
1230 - 1280	TL	509
1285 - 1330	OH	532
1335 - 1380	IC	534
1385 - 1430	BJ	522
1435 - 1465	UK	550
1470 - 1525	WA	455
1530 - 1585	TJ	352
1590 - 1645	LY	250
1650 - 1685	GA	163

Utility

RESCUE MISSION

boot tape maker

Cassette users will find that there is a long delay each time RESCUE MISSION from issue 12 is run as the program checks the data, unnecessarily, each time it is run. The following program will create a boot tape.

Type in and CSAVE this listing, ensuring first that it is correctly typed. RUN your original version of RESCUE MISSION and when the program asks you if you are 'Ready to run?' answer N (No). Now CLOAD in the boot tape listing and RUN it. You will be asked to place a tape in the cassette deck and when you press return a boot copy of RESCUE MISSION will be created on this tape. To play the game in future, you need only boot up the tape by holding START as you switch on the computer.

by Geoffrey Thompson

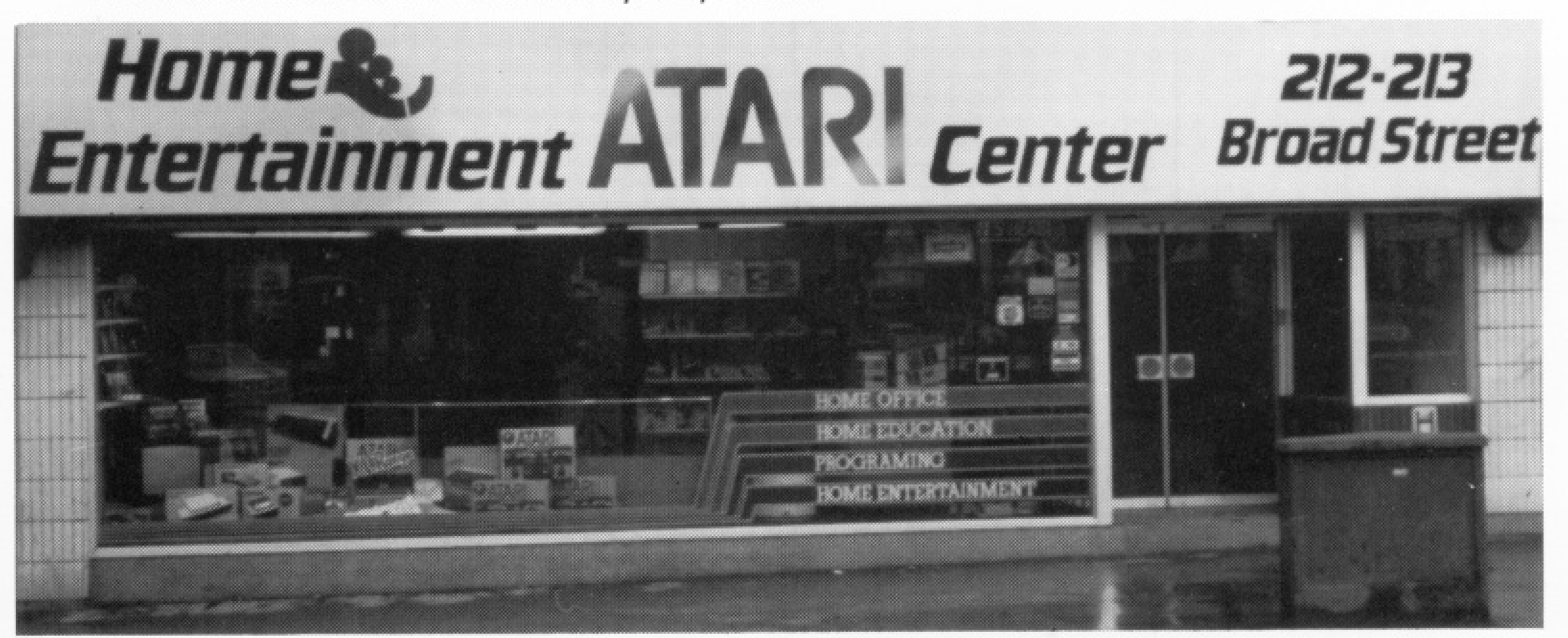
```
10 REM RESCUE MISSION BOOT TAPE MAKER
20 FOR A=1536 TO 1569:READ D:POKE A,D:
NEXT A
30 FOR MEM=20696 TO 20735:READ V:POKE
MEM,V:NEXT MEM
40 START=20696:FLEN=6528
50 ? "INSERT TAPE, PRESS PLAY AND RECO
RD"
60 OPEN #1,8,128,"C:"
70 X=USR(1536,START,FLEN):CLOSE #1
80 IF X<>1 THEN 100
90 ? "WRITE ERROR!":END
100 END
110 DATA 104,162,16,169,11,157,66,3,10
4,157,69,3,104,157,68,3
120 DATA 104,157,73,3,104,157,72,3,32,
86,228,16,4,169,1,133,212,96
130 DATA 0,51,216,80,0,81,169,0,141,47
,2,169,60,141,2,211,169,0,141,231
140 DATA 2,133,14,169,122,141,232,2,13
3,15,169,0,133,10,169,81,133,11,24,96
```

Which way?...

<u>THIS WAY</u>—Just pop into your local computer store—and there, (if you can spot it behind the washing machines and hi-fi's next to the paperbacks or even by the toiletries), is just what you're looking for: providing you want this week's top ten games for the Spectrum, or Simons Basic or even a few top titles for Atari.

There's a sales assistant who might pay you some attention and, depending on their preference; will advise you on the superb graphics of the Spectrum, the Beeb's massive memory capabilities, the ease of programming a Commodore or how well the Oric will match your decor. 'And there's £10 off this box over here!'

You do need to be an enthusiast to put up with it!



<u>OR, THIS WAY</u>

Certainly in the West Midlands, there's another way. Your Home Entertainment Atari Center in Broad Street, Birmingham. You'll be well-served by knowledgeable Atari enthusiasts, backed by the widest range of Atari associated products that only a solus-retailer can supply. Hardware, peripherals, software, books and magazines—special imports—all for Atari—and we're an Atari authorised independent Service Centre too.

In the North-West, there's an Atari Center in Miller Arcade, Preston. And now in Wolverhampton, an "in-store" Atari Center at the Owen Owen store (lower ground floor) in the Mander Centre.

If you're not in these areas, we can offer you an efficient Mail Order service that's only a phone call away. Backed with the same expertise, the same dedication to Atari—the same wish to serve you.

We can't sell you a washing machine, but then no-one can do everything well. That's why we specialise.

CHECK ATARI PRICES NOW!

Home Entertainment ATARI® CENTERS

MIDLANDS 212-213, Broad Street, Birmingham. B15 1AY.
TELEPHONE: 021-643-9100

MAIL ORDER: Tel 021-643 9100 or <u>FREEPOST</u> to the Birmingham Center.

NOW OPEN IN WOLVERHAMPTON
ATARI Center at Owen Owen, Mander Centre, Wolverhampton. (0902) 711650

From English Software. The supreme Atari challenge. Only £9.95.

Atari 400, 800 & XL COMPATIBLE

For Atari owners, English Software programs are the finest.

Our large and unique range of titles will stretch your imagination to the limit and beyond.

The needle-sharp graphics, vibrant colours and super-smooth action will really test your skills.

English Software is the leading independent for Atari – nobody does it better.

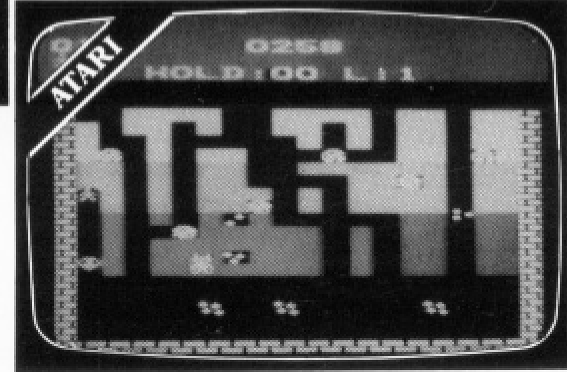
And we're fast making our programs compatible for Commodore 64.

Order direct by using the coupon (or telephone the **Sales Hot Line** on **061-835 1356**, quoting your Access or Visa number).

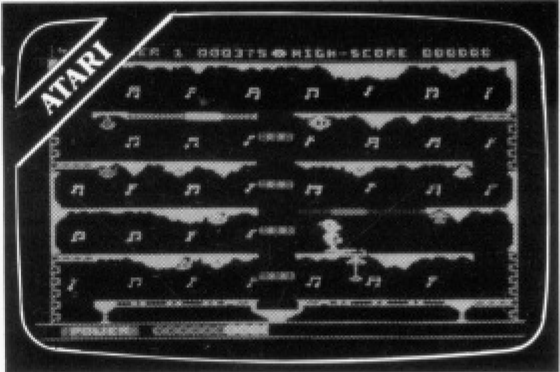


Find us at Boots, Laskys, Greens and all good software dealers.

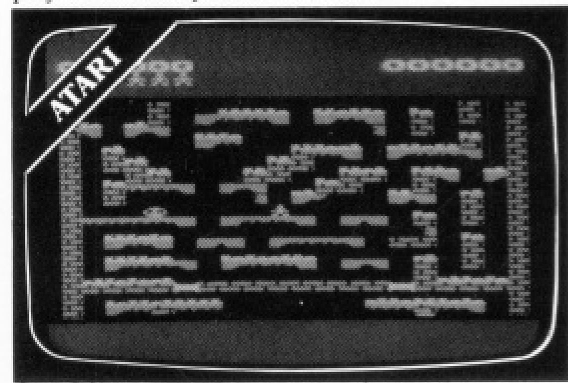
(All English Software programs are sold according to the English Software Terms of Trading, copies of which are available on request.)



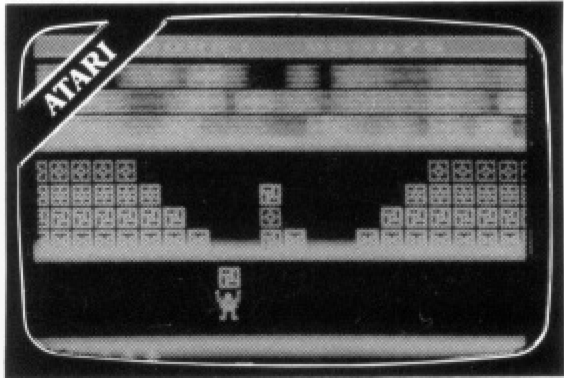
DIAMONDS 16K Cassette/Disk by Simon Hunt. Chase the Great White Diamond in ENGLISH SOFTWARE'S best-selling mining game! 16 levels of play make life very difficult indeed!



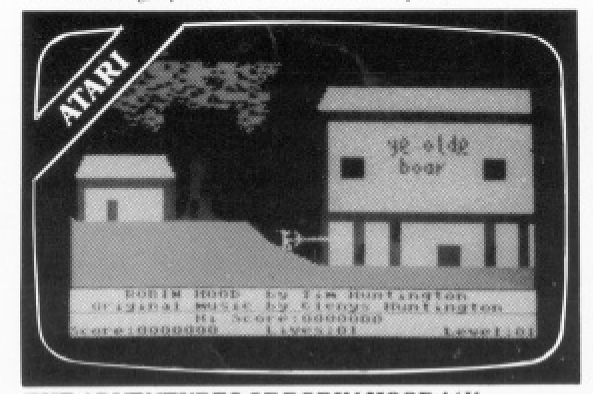
JET-BOOT JACK 32K Cassette/Disk by Jon Williams. JET-BOOT JACK, space-age jogger, takes you on a chase through the vinyl vaults of the PRESSING PLANT!



DAN STRIKES BACK 16K Cassette/Disk by Simon Hunt. In the first sequel to the top-selling DIAMONDS, Brian the Blob has stolen the GREAT DIAMOND and hidden it in the deepest vault.



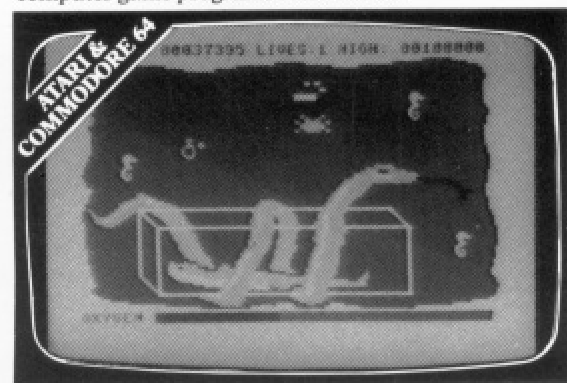
BATTY BUILDERS 16K Cassette/Disk by Manuel D Caballero. Play BATTY BUILDERS and indulge yourself in one of the best non-violent constructive computer game programs ever written.



THE ADVENTURES OF ROBIN HOOD 16K Cassette/Disk by Tim Huntington. Join ROBIN HOOD in his efforts to thwart the SHERIFF'S MEN, rescue the bags of silver and plant kisses on the lips of the beautiful MAID MARIAN!



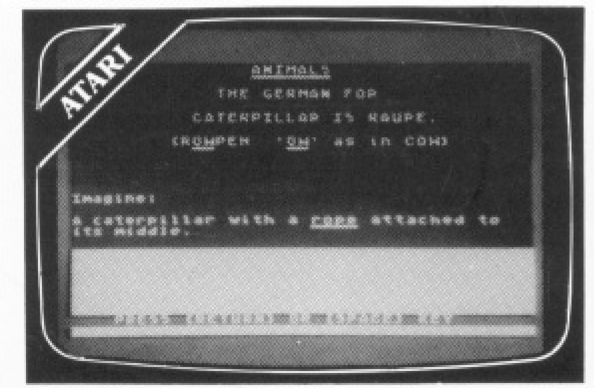
CITADEL WARRIOR 32K Cassette/Disk by Jon Mayers and Ken Farnen. The nations of the world are at the mercy of D-E-A-T-H (Dastardly Earthwide Anarchists and Terrorists against Happiness.) They are out to destroy the security CITADELS with their CYCLOTRON BOMBS!



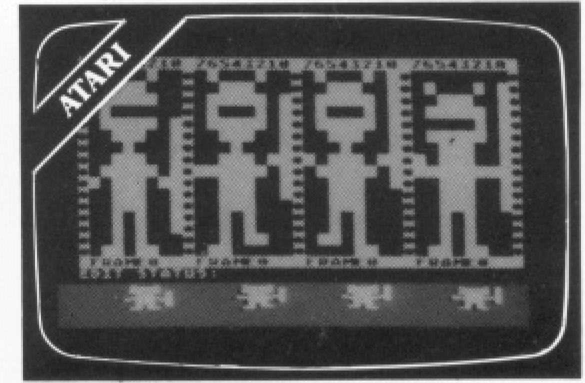
NEPTUNE'S DAUGHTERS 16K Cassette/Disk by Mark J Taylor and Michael Hedley. Designed by Ralph Frumin. Our 1st multi-screen arcade adventure takes you beneath the ocean's waves in search of NEPTUNE'S DAUGHTERS, held captive by the evil Sea Serpent!

ATARI **A.C.E. THE ATARI CASSETTE ENHANCER** by Jon Williams

Cassette features include: Names cassette-saved programs. Searches and loads named program. Displays contents of cassette on screen. Verify facility. Lists variables. Automatic line numbering. Renumbers any basic program quickly. Creates binary files on tape. Plus many, many more features. Uses only 4K of memory maximum! £7.95



GRUNEBERG LINKWORD LANGUAGE SYSTEM: GERMAN 32K Cassette/Disk Designed by Dr Michael M Gruneberg. Program by Steven A Riding. With the use of a unique blend of visual imagery and psychology, it will teach you the basic grammar and more than 350 German words in only 10 hours! Supplied complete with separate audio pronunciation tape. £12.95



THE ATARI GRAPHICS WIZARD! 16K Cassette/32 K Disk by Steven A Riding. THE ATARI GRAPHICS WIZARD introduces you to the wonderful world of ATARI PLAYER (SPRITE) and CHARACTER GRAPHICS! Written totally in Machine Code, it contains: PLAYER EDITOR (SPRITEMAKER); CHARACTER EDITOR, MULTICOLOUR CHARACTER EDITOR.

PROGRAMMERS WANTED

We're always on the lookout for new programmers. If you can work to the English Software standard of quality, we'll reward you by marketing your programs across Europe and USA! Contact us today.



THE POWER OF EXCITEMENT

The English Software Company, Box 43, Manchester M60 3AD Trade Enquiries Tel: 061-835 1358

To English Software Company, Box 43, Manchester M60 3AD
Please rush me the following on cassette/disk. Tick box
I enclose cheque/PO/Cash for £______ (post-free) or please debit my Access/Visa No ______
Name ______
Address ______

P6 Access VISA

The Adventures of Robin Hood	□	£ 9.95
A.C.E.	□	£ 7.95
Diamonds	□	£ 9.95
Dan Strikes Back	□	£ 9.95
Citadel Warrior	□	£ 9.95
Gruneberg German	□	£12.95
Jet-Boot Jack	□	£ 9.95
Batty Builders	□	£ 9.95
Neptune's Daughters Atari	□	£ 9.95
Neptune's Daughters CBM 64	□	£ 7.95
The Atari Graphics Wizard	□	£ 9.95